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They invest billions in information technology,  
but are hotels getting a return on their investment?

# Investment in Information Technology: The Multi-Billion Dollar Game of Chance

by Paul J. Brown

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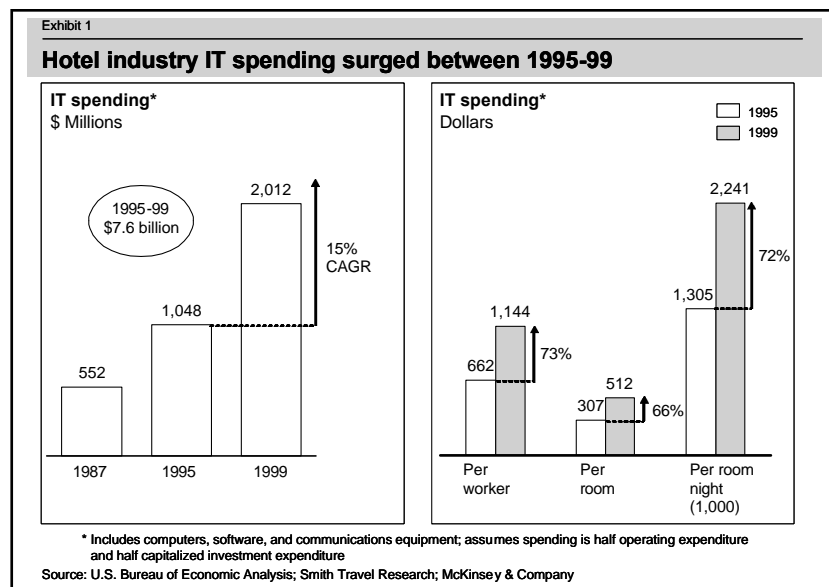
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During the latter half of the last decade, the U.S. hotel industry spent nearly \$8 billion on information technology—more than 9 percent of the pre-tax industry profit during this period. Since 1995, the hotel industry has increased information technology (IT) expenditures 15 percent a year, driving up the level of IT investment per room sold by almost 75 percent (see Exhibit 1).<sup>1</sup>

While these figures may appear extreme, they are in line with the rest of the U.S. economy. In fact, the retail sector increased IT spending even more dramatically during this same period—more than tripling its growth rate of IT spending per employee from 4 percent annually to almost 17 percent annually (see Exhibit 2).

Measuring the return on investment in IT has always been an elusive goal. Often, companies are required to spend on IT just to maintain competitive parity—and



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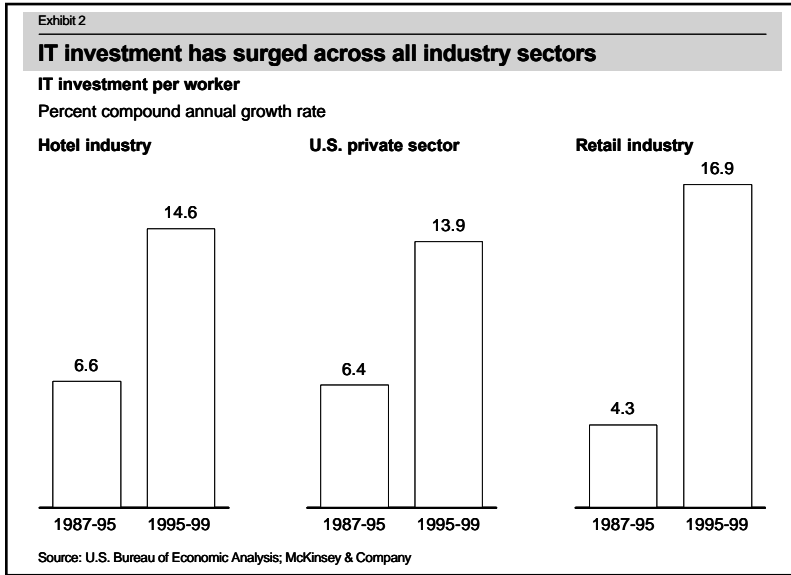
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of three percentage points annually above the consumer price index, driving revenue per available room (RevPAR) up from a 3 percent annual growth rate prior to 1995 to nearly 5 percent during the last half of the decade. This growth added almost 1,400 basis points to industry margins in 1999 versus 1995 (see Exhibit 3).

However, this phenomenal performance can be attributed almost entirely to the U.S. economic boom of the late 1990s. Historically, the overall strength of the U.S. economy,

the pressures to continue investing are only expected to increase. Therefore, the key question for the industry is how can companies get the greatest possible benefit from future IT investment? In order to answer this question, we look at not only how much the industry invested in IT, but also at how the money was spent, what companies got for it, and how it should impact our thinking about future investment.

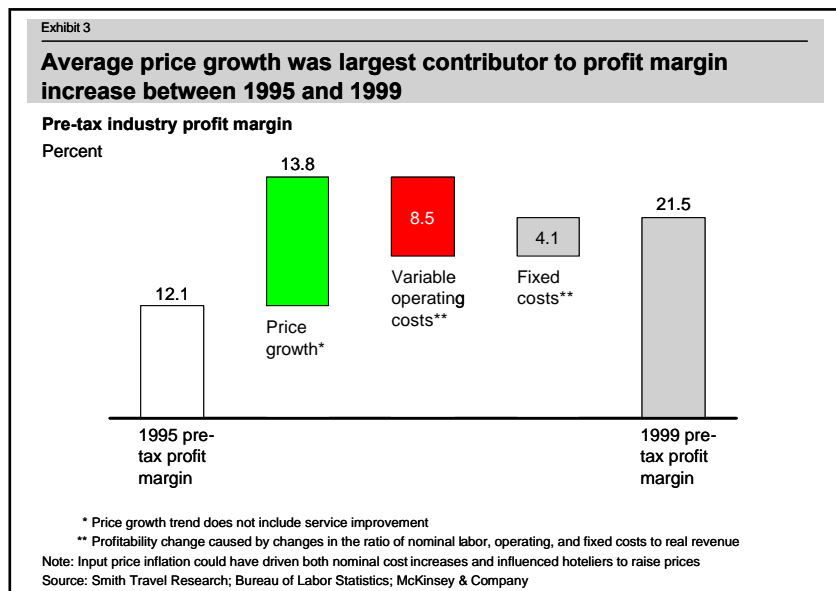
as measured by the gross domestic product (GDP), tracks very closely with industry RevPAR (see Exhibit 4). Industry revenue performance tracked just as closely with the overall economy after this period of accelerated IT investment as it did before.

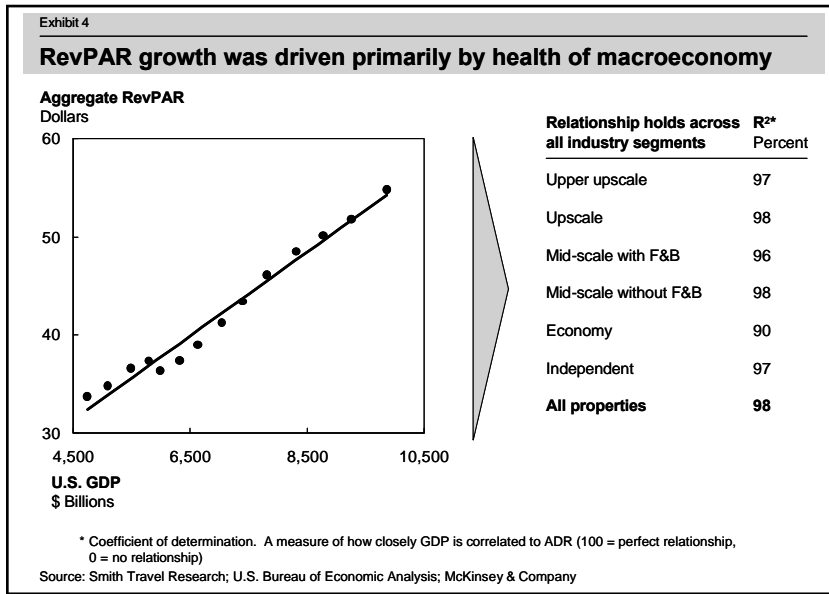
### What Did \$8 Billion Buy Us Anyway?

Despite the great promise that accompanied IT investment, evidence is difficult to find that this spending had a direct impact on improving industry profitability, either by driving up top-line revenue performance beyond historical performance levels or increasing operational efficiency as measured by labor productivity.

From 1995 to 1999, the hotel industry experienced tremendous revenue growth. Over this five-year period, the industry was able to increase room rates an average

Additionally, IT does not seem to have been a clear source of competitive distinction for individual chains. Companies designated as IT “best-practice champions” by such sources as Cornell University and *Internet Week*, on average, were not able to





To put this difference into perspective, if the hotel industry had experienced the same gains in labor productivity as the overall U.S. business sector, hotels would have saved over \$4 billion on labor between 1995 and 1999—over one half of the \$8 billion spent on IT.

So what happened? Who received the benefit of this investment? And what can we do differently in the future? As we move into the twenty-first century and industry profits subside from their record high, IT spending has the

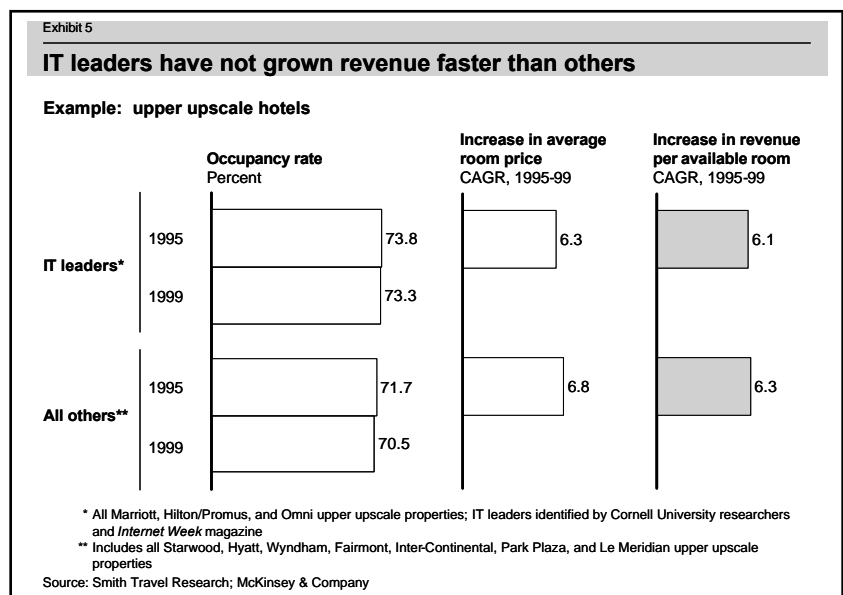
potential to consume an increasingly larger share of the shrinking pool of industry profits. Therefore, we feel that understanding the answers to these questions is the critical first step in determining what the industry can do differently to improve the odds of getting a meaningful return on its IT dollar.

increase RevPAR faster than competitors (see Exhibit 5). Even when we looked at the relative performance of the IT “best-practice champions” in high occupancy markets such as New York, San Francisco, and Chicago versus the rest of the nation, the difference in RevPAR performance improvement post-1995 was negligible (see Exhibit 6).

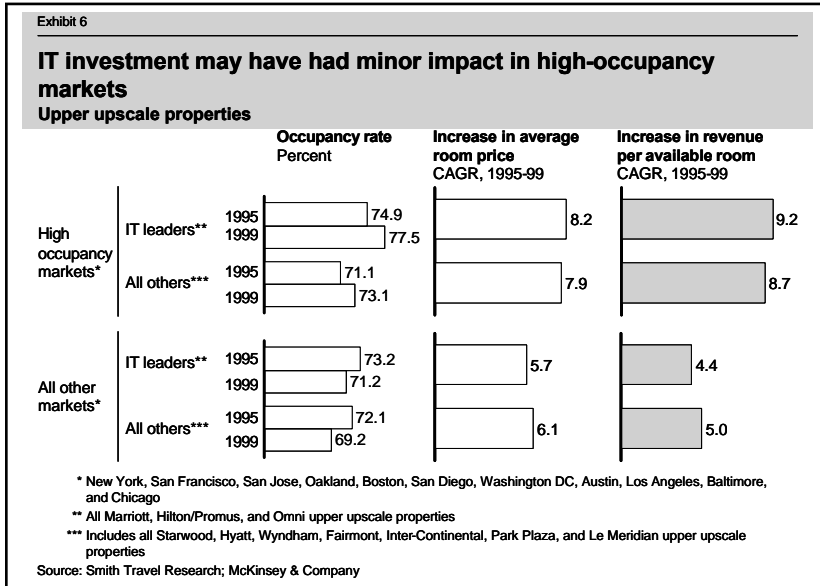
Operationally, the picture isn’t much better. While the industry was experiencing rapid acceleration in revenues, it also layered in an additional 850 basis points in costs—driven largely by an increase in variable operating costs and a failure to improve labor productivity.<sup>2</sup> Since 1995, the hotel industry has experienced virtually zero growth in labor productivity; during the same period, the overall U.S. business sector improved labor productivity 2.5 percent annually. Even more dramatic, the retail industry, which largely draws on the same labor pool as the hotel industry, improved labor productivity over 3 percent a year (see Exhibit 7).

### Where Was the Money Spent?

At first blush, we might want to blame Y2K for the post-1995 spending surge. While this proved



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is virtually all profit and the value of any unsold inventory vanishes overnight. In fact, our analysis indicates that \$1 in incremental RevPAR generally contributes \$0.70 to \$0.80 directly to the bottom line.

Chains drive a high percentage of IT investments. Chain profits (particularly for franchising companies) are determined in large part by a percentage of top line revenues. This incentive structure further reinforces a focus on IT investments that maximize revenue versus reducing

to be significant, Y2K related expenses represented only 20 percent of total IT spending during this period. Over \$6 billion was spent on non-Y2K related technology enhancements, with the vast majority of that amount allocated to systems associated with revenue delivery (see Exhibit 8). These investments were intended to enhance industry revenue performance primarily through four mechanisms: real-time reservations, improved guest history/CRM (customer relationship management), revenue management, and electronic distribution through the Internet.

hotel operating costs.

IT facilitates most major activities involved in selling room nights. Marketing, pricing, inventory control, booking, guest check-in and checkout all use IT in a substantive way (see Exhibit 10).

## Why Haven't We Seen Greater Returns?

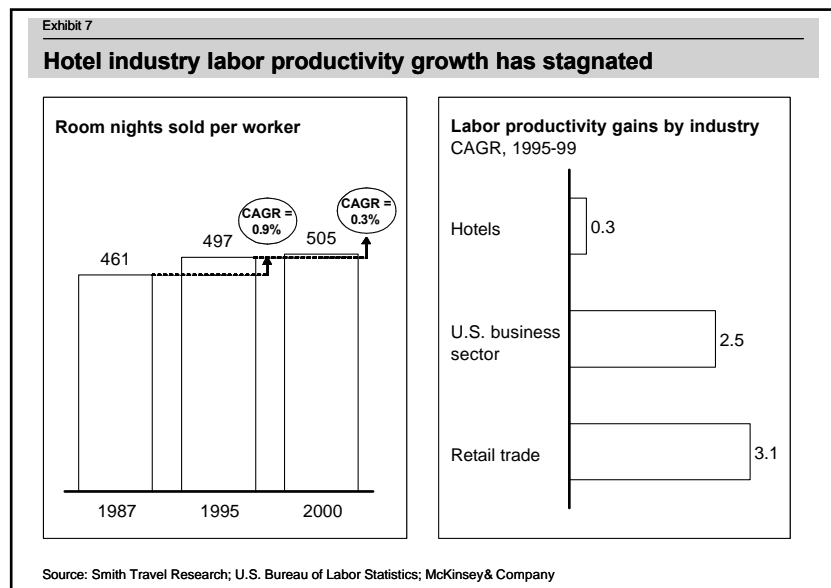
Three factors explain the apparent lack of returns from IT spending:

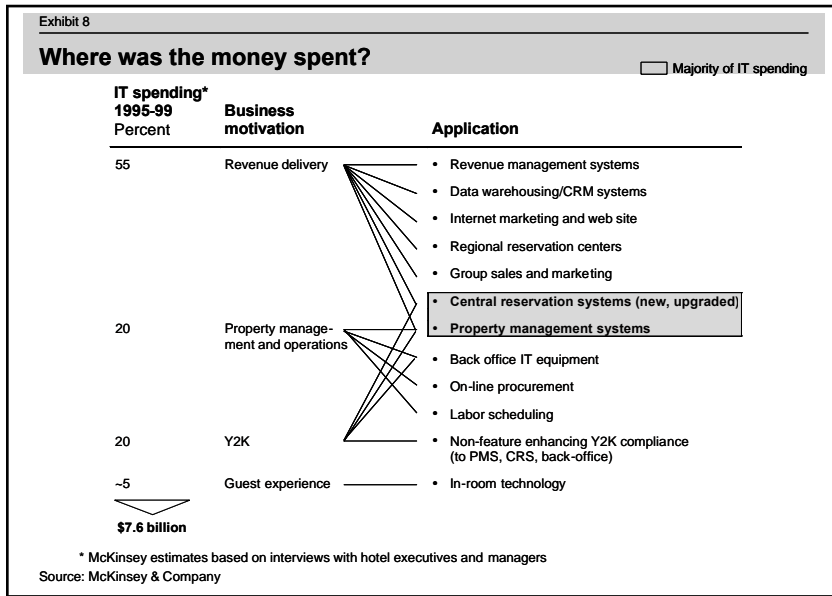
Hotels' unwillingness (or inability) to charge for the consumer benefits they created

In terms of applications, the majority of the spending (approximately 60 percent) was on property management systems (PMS), central reservations systems (CRS), and the interface between the two, with ancillary applications such as guest history/CRM, revenue management, Internet reservations, and marketing accounting for most of the remainder (see Exhibit 9).

It is understandable why most of the effort focused on revenue delivery systems:

The hotel business is a high incremental margin business—the last room sold





Much of this convenience was provided in the name of creating greater “brand value.” However, without significant barriers to IT adoption, any brand advantage is quickly competed away to the benefit of the guests. Several industry experts described hotels’ IT investment decisions as “herd behavior.” “If [Chain X] invests in a customer loyalty program,” stated one executive, “everyone will follow suit.”

In reality, hotels may have increased customer expectations

A highly fragmented industry structure that hampers efficient investment

A phenomenon we term the “last mile” problem of the hotel industry

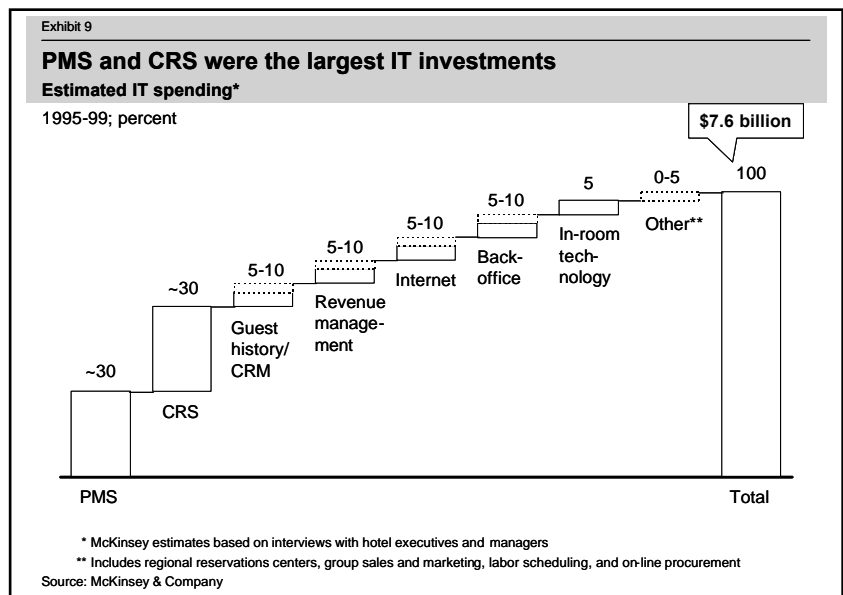
to the point where IT investments are mandatory to compete, but provide no clear competitive advantage vis-à-vis other hotels with similar offerings, leading to a technological “arms race” with no end in sight.

### Have We Fully Charged for the Benefits Provided to Our Guests?

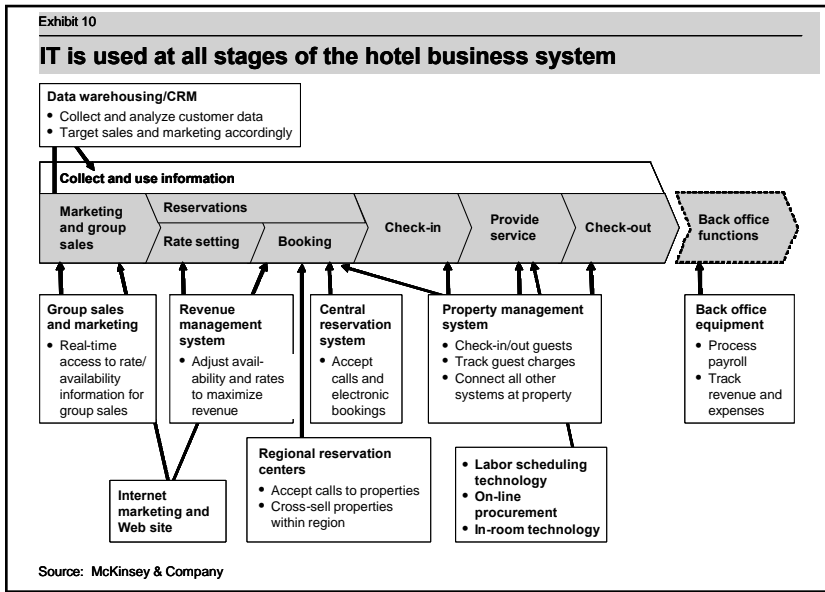
The typical hotel guest has benefited greatly from the industry’s investment in IT. Powered by large data warehouses, guest loyalty programs reward guests with service upgrades and discounted rates for repeat business. New property management systems have faster processing speeds, require fewer keystrokes, and boast virtually instantaneous credit card approval—all resulting in speedier guest check-in and checkout. Investments in in-room technology allow guests to view movies on demand, print and receive faxes in their rooms, and check e-mails and talk on the phone at the same time. Even finding and booking a room at a great rate is significantly easier than it was five years ago.

### How Has Industry Structure Hampered Our Ability to Coordinate IT Spending?

The hotel industry has an extremely fragmented and complex structure. To illustrate this, look at Cendant, the largest hotel chain worldwide. Cendant brands less



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contracting for proprietary or highly customized systems to address the same functional needs. The sum total of each of these investments is much greater than if the industry was less fragmented. For example, if the top ten chains represented twice as many properties, total IT spending would have been nearly \$2 billion less for the same level of functionality.

Decades of redundant investment by hotel companies have resulted in excess spending on proprietary system modifications and an unattractive market for the top

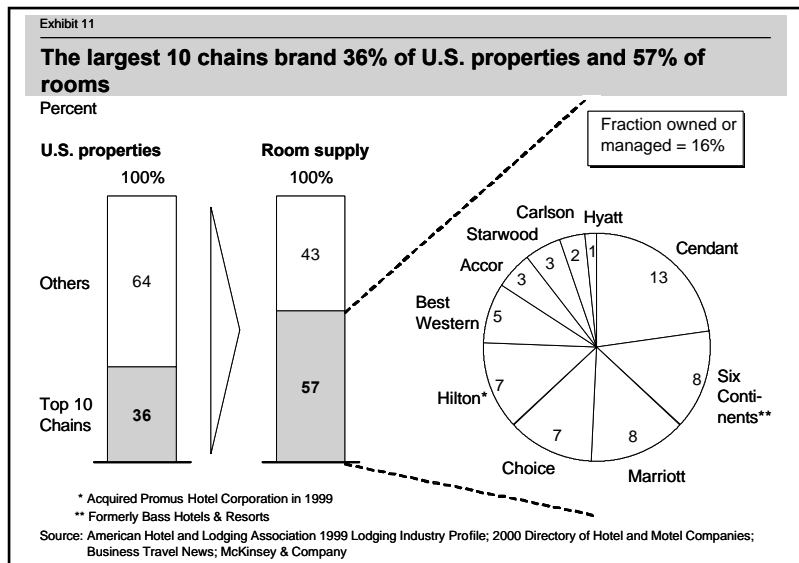
than 15 percent of rooms nationally. But that is only part of the issue. While the top ten chains brand 57 percent of rooms and 36 percent of properties, they own or manage only 16 percent of these properties because of the dominance of the franchising model (see Exhibit 11). For example, Cendant boasts 5,200 different franchisees for its 6,400 properties worldwide. During the latter half of the 1990s, over 90 percent of all properties added by the largest chains<sup>3</sup> were franchised rather than owned or managed (see Exhibit 12).

software vendors. Consequently, no single property management system dominates and most major chains either develop their own proprietary property management system or extensively modify the off-the-shelf version. Central reservations systems are equally subject to modification or in-house development by chains.

The high cost of complexity for software vendors, driven by the tendency of each hotel company to customize even off-the-shelf systems, has limited the attractiveness of the hotel industry to many

This structure is quite different from the retail trade industry. For example, in general merchandising, the top five players compose 60 percent of the total market—and own all of their stores (see Exhibit 13). The uniquely fragmented structure of the hotel industry can lead to redundant IT investment across companies and a corresponding lack of industry standards.

Approximately half of the total IT spending by a hotel company is fixed; that is, it is independent of the number of properties in the chain.<sup>4</sup> Therefore, each chain is designing, building, and





world-class software vendors. This contrasts starkly with other service industries that are specifically targeted by large software providers, including McKessonHBOC and Siemens (healthcare) and SunGard Data Systems (banking).

### What Is the Hotel Industry’s “Last Mile” Problem?

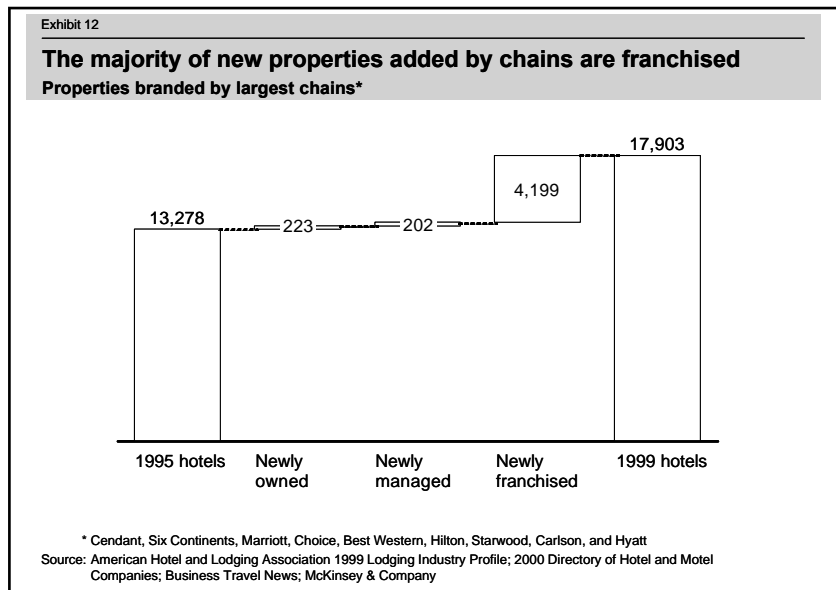
How many times have hotel executives heard the following phrases? “It all works perfectly until the interface with the property” or “We can provide any functionality you want, unless it has to touch the property.” Because properties tend to have multiple decision makers (a hotel owner, property manager, franchiser, etc.), chains—particularly the largest franchise chains—have trouble achieving property compliance to both technology and process standards. Consequently, the industry is not only littered with a diverse collection of legacy systems, but is also reliant on property level employees who often do not know how to operate the systems effectively.

Legacy CRS and PMS technologies are used for their stand-alone functions (booking reservations and guest check-in, respectively) rather than for their abilities as a network or interface system. Therefore, most applications that require these interfaces are hampered by their inability to reap the full benefits of any IT investment, particularly in “property dependent” applications such as revenue management and CRM. For example, effective revenue management requires full access to property inventory and the presentation of a consistent distribution strategy to consumers. Similarly, the ability to turn stored guest data into customer value requires transferring data to the properties

so that the front desk clerk or concierge can act on the information to enhance the guest experience. Neither of these is possible without a good interface.

Replacing all of the legacy systems would, however, address just part of the problem. Even the most elegant and sophisticated systems are only as effective as our ability to utilize them. While rolling out a new PMS or CRS system across several hundred properties distributed among dozens of countries is a phenomenally complex and challenging task, hotel companies tend to allocate a disproportionate amount of time to system building rather than implementation and rollout.

In contrast, McKinsey research has found that major retail chains’ ability to systematically roll out managerial and technical innovations consistently across all of their stores has driven the industry’s significant performance in the 1990s. This success would have been difficult without the concentration of the industry in the hands of the top five firms (Wal-Mart, Target, K-Mart, Costco, and Sears) and their ability to diffuse innovation rapidly throughout their network of stores (see Exhibit 13).



**What Can We Do about It?**

We recommend the following steps to improve returns from IT investments.

- **Partner with others whenever possible**

Effective utilization of technology, not technology itself, creates a competitive advantage. Assume every hotel company had the most advanced property management system currently available with all of the customer information/CRM features possible. The effectiveness of this system would still vary dramatically by company. For example, just having the technical capability to store in the guest name record that someone prefers feather pillows is of little value. Competitive differentiation comes from the processes that capture that information and from the ability of the hotel operations staff to consistently act on it—in this case, changing the pillows in the guest’s room before his or her arrival.

Which would be a better use of funds: (1) spending \$50 million on development of a proprietary central reservations system or (2) sharing the development investment with two partners and spending the remaining \$30 million on rollout and training? While this is understandably an oversimplified illustration, in a highly

fragmented industry such as hospitality, executives must explore any opportunity to leverage fixed investment across a larger base.

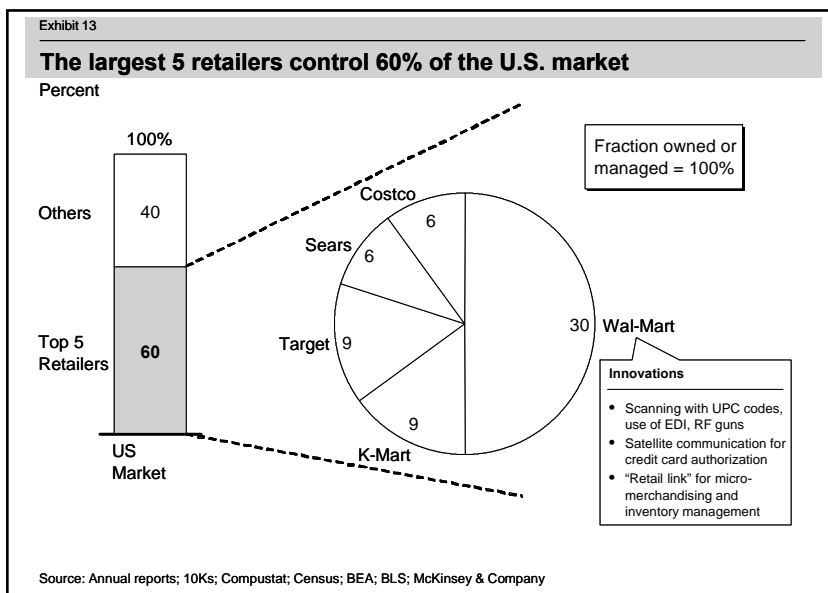
There are many ways to share the burden of IT investment, ranging from outsourcing arrangements with technology vendors to joint ventures with other hotel companies. As with any partnership or vendor relationship, the costs of complexity as well as the loss of autonomy need to be weighed against the financial benefits of the arrangement.

As mentioned earlier, perhaps the biggest obstacle to effective outsourcing in the hospitality industry has been the historical absence of world-class technology vendors. However, unless the large hotel companies show signs of committing business to outside vendors and a willingness to standardize around a few platforms, the quality of the vendor base is unlikely to improve.

- **Strike the right balance between standardization and customization**

Historically, the hotel industry has strongly resisted the standardization of systems and processes. The well-used adage in the industry has always been “my property is unique,” and, due to the decentralized nature of the business, the industry has chosen to adapt systems to existing processes rather than standardizing processes around systems.

Several hotel companies have attempted to standardize their property-based systems, but these efforts have generally met with limited success. In most cases, the companies erred on the size of “one-size-fits-all” systems, which is particularly problematic for chains with properties in multiple market segments. These companies often had to make property specific enhancements to the “standard” systems in order to accommodate the



unique requirements of certain properties, leaving the company with many different versions to support.

Companies can use major IT projects as an opportunity to improve and, where possible, standardize operations across the chain. Properties can be benchmarked against each other and best-practice processes identified and categorized by property type. Modular IT systems can be designed around the best-in-class processes of each major property type. Modules can then be plugged together based on the individual hotel's requirements. Once installed at the property, the systems can be used to drive property compliance to best practice processes.

- ***Commit adequate resources to systems implementation and training programs***

Remember the adage “an IT system is only as good as its user.” Rollout and training is as critical a component to the success of the project as the programmers themselves. Senior managers should resist the temptation to cut training dollars first when asked to reduce a project's budget—assuming the operations group can fund and staff the rollout as part of their ongoing operations.

In our experience, training and implementation costs in a highly distributed environment such as the hotel or retail industry can often equal or exceed the cost of software development. This, of course, will vary widely depending on the number of users that need to be trained on the system (e.g., property management system versus corporate accounting system). However, given that the majority of IT investment is currently being spent on PMS and reservation systems enhancements, the training and implementation component of these projects will remain a significant investment for the industry in the foreseeable future.

Lack of focus on implementation and training is often as much a result of organizational structures as budgetary shortfalls. Many hotel groups have a highly decentralized organizational structure, with the divisional heads wielding a tremendous amount of influence over

operations. In order for any corporate-wide initiative impacting the properties to be successful, centralized functions such as marketing and IT must secure and retain “buy-in” from the operational divisions.

For lengthy projects, support of divisional management will often wane and the relative prioritization of the initiative will slip. In order to prevent this outcome, companies should assign a senior operations executive with the responsibility of ensuring successful completion of the project rollout rather than leaving sole accountability with the heads of the centralized corporate functions who have limited control over divisional resources.

- ***Manage the IT capital investment process as relentlessly as the hotel property capital investment process***

Most hotel companies have an extremely rigid and defined process for the approval of development and technical services projects. Difficult questions are asked, answers are challenged, backup information is demanded, and optional scenarios and sensitivity analyses are expected to be included as part of the business case. Compare the rigor of this process in your company with the capital allocation process for IT projects. The investment being requested by the IT department frequently constitutes more than a hotel property, with longer payback periods and greater variability.

Information technology is not generally in the “comfort zone” of most hotel company executives; therefore, they tend not to ask hard questions or challenge answers. Nevertheless, the basic business questions remain the same: What is the project ROI (return on investment)? Where will the projected cost savings/revenue lift come from? How will we measure success? What business owners are signing up to deliver these numbers? What are the risk factors? And perhaps most important: What are our alternative courses of action?

Possibly the most fatal error in the IT capital allocation process is the failure to assign accountability for

delivering the expected benefits (e.g., cost reduction, revenue enhancement) of the project. Before the project is approved, accountability for each line item in the “return” column of the ROI calculation should be assigned to an individual, along with the appropriate deliverable milestones.

- **Avoid the temptation to give away the value generated by technology investments**


The hotel industry has an inexhaustible tendency toward “feature creep.” Whether in the name of “brand value,” competitive parity, or implementation difficulty, the industry has generally bundled benefits into room rates.

Hotels can extract a premium for these additional services in several ways. The most common and visible method is to charge an additional usage fee. A subtler and potentially more effective way is to selectively bundle benefits into the rate of a subset of room categories. This allows hotels to establish an additional set of benefits-based hurdles between room rate categories and provides a mechanism with which to “upsell” customers into a room category that contains the services they value. Technology bundles can be static (part of the published rate class) or dynamic (tailored to a specific customer) via either CRM software or just “plain old good salesmanship” (otherwise known as POGS) by sales representatives and reservations agents.

- **Prioritize and target investment against highest potential customer segments**

Because all customers are not equal, they will not place an equal value on the benefits they enjoy from technology investments. Understanding the relative value that customers place on different services is particularly important when considering in-room technology investments.

For example, a family on vacation will not place the same value on high-speed Internet access

as a technology consultant on a three-month systems integration project. Hotels should prioritize not only in which properties technology services should be installed, but also in how many and what types of rooms (i.e., club floor, business rooms) within each property. This prioritization should be rooted in an understanding of who the customer is and what services they value. 

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<sup>1</sup> Assumes that total IT spending is approximately half capitalized investment and half non-capitalized operating expenditure. This assumption is qualitatively supported by GartnerGroup’s “IT Spending and Staffing Survey” and our interviews with hotel executives. Additionally, GartnerGroup, Rubin Systems, and *Hotels* magazine suggest that total IT spending was approximately equal to 2 percent of industry revenues, which is consistent with an equal split between capitalized and operating IT expenditure. The IT investment estimate of \$3.8 billion is obtained directly from the U.S. Bureau of Economic Analysis.

<sup>2</sup> Mathematically, productivity is calculated as the ratio between “output” (room nights) and “input” (labor hours worked to sell and provide those room nights).

<sup>3</sup> Cendant, Six Continents (formerly Bass Hotels & Resorts), Marriott, Choice, Best Western, Hilton, Starwood, Carlson, and Hyatt

<sup>4</sup> Assuming all CRS, CRM, Internet, and some revenue management spending is not variable with the number of properties in a chain

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*This article relies heavily on research conducted by the McKinsey Global Institute during its yearlong study of the drivers of the recent U.S. labor productivity performance, including the role of IT. Their report, U.S. Productivity Growth 1995-2000: Understanding the Contribution of Information Technology Relative to Other Factors, can be downloaded at <http://www.mckinsey.com/knowledge/mgi/reports/productivity.asp>.*