



In the movie classic, *2001 — A Space Odyssey*, an early primate discovers he can use a bone as a weapon, then throws it high into the air where it dissolves into the form of a space-ship silently orbiting the earth. In the blink of an eye, the film captures a long span of history from the first tools to space age technologies that

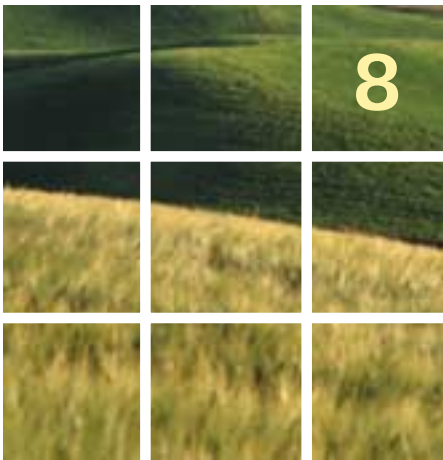
### **Strategy and technology**

Our study probes the relationship of technology to strategy, including how technology strategy is developed, linked to the business plan and integrated into the organization. These wide-ranging questions are particularly important given how technology systems have evolved as

## **Hospitality 2000: The Technology**

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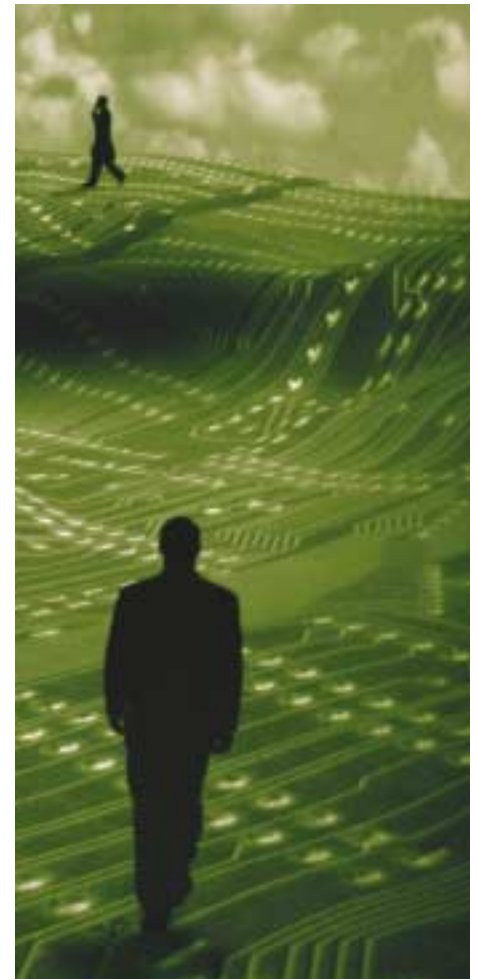
### **Groundbreaking study probes industry challenges**



continue to reshape human life. Few issues are of greater importance to hospitality on the eve of the new millennium. In every era, the most successful organizations have excelled at using the advanced tools and technologies of the time.

Our third global study in the *Hospitality 2000* series, as a result, focuses on technology. But in contrast to most research in technology, *Hospitality 2000 — The Technology*, goes beyond the tools themselves to address key strategic and organizational issues. Our focus — how technology will drive value for the industry in the future, with a particular emphasis on how technology will support customer-focused hospitality organizations.

This article provides a snapshot of the findings and conclusions in this groundbreaking study, available in a full report published by Arthur Andersen and our co-sponsors — New York University's Center for Hospitality, Tourism and Travel Administration and the international Hospitality Financial and Technology Professionals (HFTP).





closed and often proprietary architectures that do not “speak” easily to each other. Today’s hospitality technology represents a legacy reflecting the computer industry’s capabilities during the last two decades and the willingness of hotel executives to embrace its products. Early systems were often custom-designed for proprietary application, and they have not always been successfully integrated. With varying vendor applications for different parts of the business, interface and integration have become key issues for many organizations.

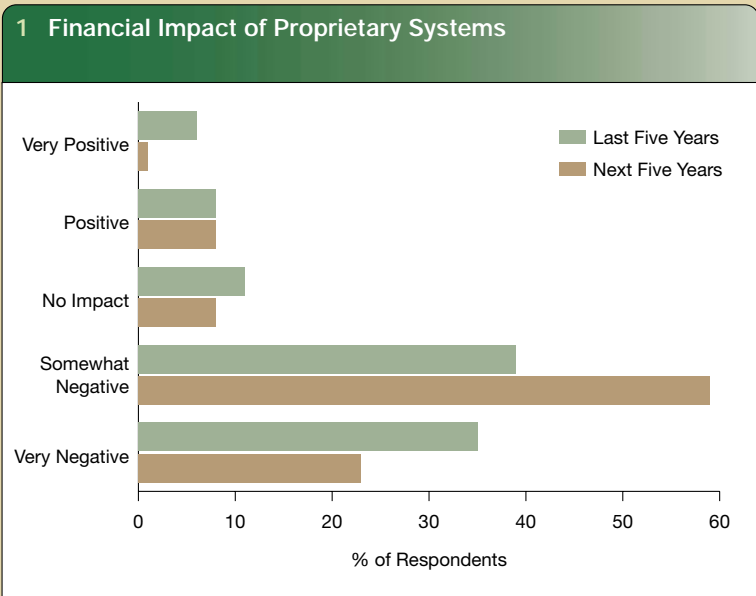
Indeed, 82 percent of executives surveyed believe the closed architecture of the industry’s technology has had a negative financial impact on the industry, and three-quarters believe this will continue in the five years to come. Furthermore, about two-thirds of respondents believe that the industry’s technology advances have been slowed, as a result. Addressing the problem of standards in the industry is the American Hotel and Motel Association’s Hospitality Industry Technology Integration Standards (“HITIS”) project which is making progress toward the goal of mitigating the

problem in future years — although as our survey results suggest, there remains plenty of concern within the industry’s leadership. (See chart 1)

Setting the strategic direction for technology appears to fall to the senior executives of hospitality enterprises. Two-thirds of respondents indicate an involvement of the Chief Financial Officer, while Chief Information Officers follow at 57 percent of companies. Other members of the senior management team involved in technology strategy are CEOs (52 percent), General Managers (50 percent) and Chief Operating Officers (42 percent).

While most mission statements (92 percent) have some reference to a “customer focus,” when it comes to technology, only a minority (28 percent) give it reference as an element in the company’s mission. This suggests that while most hospitality companies are clear on their customer orientation, they are unsure of whether technology should be a principal driver to success. Predictably, the larger chains are more technology focused in their mission statements than are so-called “independent” (non-chain) companies. (See chart 2)

Our study also queried executives on issues relating to technology investment, a key issue for all organizations given the cost of new technologies, as well as the conversion of older “legacy” systems. The quandary facing the industry is how to balance the need to keep up with technology advances, while maintaining returns on capital over the short-term. During the last three years, hospitality organizations have spent the equivalent of 3.1 percent of their revenue on investments in information technology. And during the next three years, they plan to increase this to approximately 4 percent of revenue — suggesting an approximate one-third increase in spending. As to what all the increased spending is going for, the top priority is for property management systems. This is followed in order of importance by yield management, reservation systems, sales and catering systems, e-mail/internet, database marketing, point of sale, food and beverage, guestroom technologies and, finally, kiosks for check-in and check-out.





**Technology in the organization**

The success of a company’s technology strategy will require a firm commitment from all levels of the organization. The study addresses a range of issues relating to organizational impact, including the structure of the IT function within the organization, current and future methods of technology training, and how companies will be integrating their systems in the future.

As to integrating the ways in which people communicate and share their work, most hospitality organizations currently have Local Area Networks (LANs) within their hotels, and if they don’t, they plan to by year 2000. Less than half of the executives, however, report the use of so-called Wide Area Networks linking their hotels to their corporate offices. By year 2000 some 62 percent plan to do so. Forty-two percent of the executives surveyed report their organizations have intranets (a web-based internal network). But this should jump to 72 percent by year 2000. And finally as to extranets that link to other companies’ networks of suppliers or customers, 19 percent indicate they have such structures in place today with this ratio growing to close to one-half by year

2000. (See chart 3)

In terms of how technology organizations are structured, there is significant variation within the industry. Close to three-quarters of respondents indicate that their company has a separate IT department, whereas nearly one-quarter place IT responsibility with a key senior executive. A small minority has no internal function. They outsource IT needs to a third party. Of those with separate departments, the reporting lines vary – 43 percent report to the company’s CFO, while other senior executives are less involved (CEOs – 17 percent; CIOs – 17 percent; COOs – 12 percent; and GMs – 9 percent). For those without separate IT departments — mostly individual hotels — the property’s controller or CFO tends to pick up the IT responsibility most of the time (61 percent) with general managers (GMs) trailing at 17 percent.

**Sales and marketing**

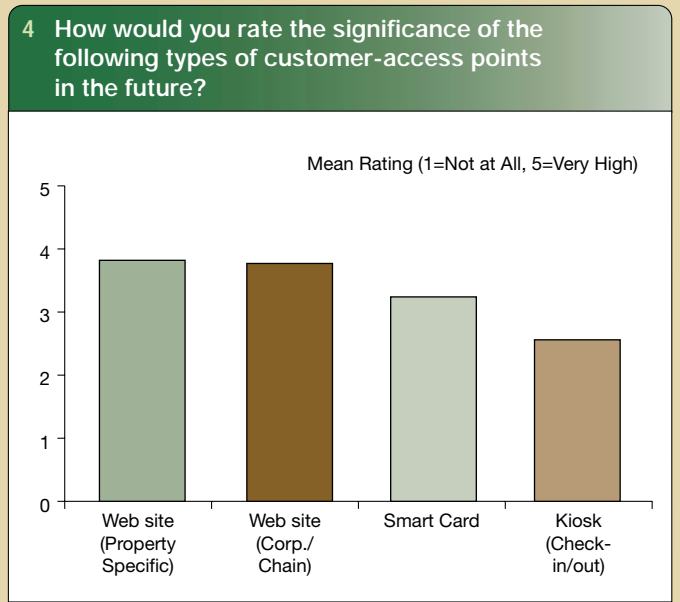
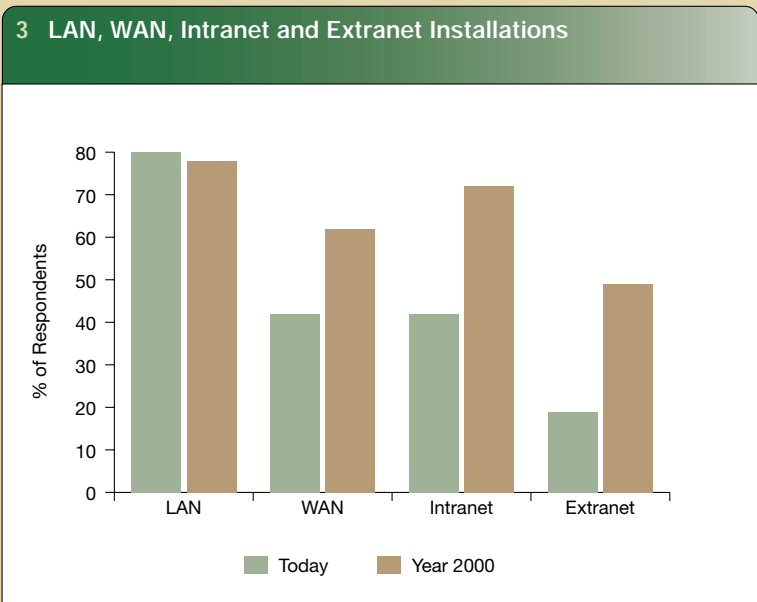
In the customer-focused hospitality enterprise of the future, technology will play an increasingly important role in allowing hospitality organizations to recognize, evaluate and relate to the customer. Our study addresses the changing role of technology in the sales

and marketing function by investigating evolving customer “touch points,” as well as the automation of the sales and marketing function.

Customers have moved quickly to embrace new ways of communicating with hospitality companies. The relative significance of some of the new customer access points provides an indication of where the industry’s emphasis will be in the future. Predictably, our respondents rate web sites the most highly (3.8 out of a total score of 5). Smart Cards (3.2) and Kiosks for check-in and check-out (2.6) follow in ratings as access points. (See chart 4)

The industry is evidently making significant progress in deploying technology into the sales function, with a 70 percent overall adoption rate for some form of sales automation. And while the industry has clearly gone a long way in automating the sales process, its integration to property-level systems is lagging. Of those with some automation in the sales function, only one-half are integrated into their property management systems (PMS).

While technology has clearly improved productivity within sales, less headway has been made in other areas of market-





ing. Provided with a series of application choices, just over half of the respondents (55 percent) indicate they currently have automated customer acquisition and retention analysis, while three-quarters indicate they have plans for such automation by year 2000.

As a big part of the industry's "real estate" and the place where the customer expects not only comfort, but convenience and service as well, the guestroom is where technology applications can and will provide competitive advantage. Voice mail is the dominant item with an 84 percent adoption rate among these organizations. On-demand movies and dual phone lines are reported by two-thirds of respondents. In-room Internet access is next at 57 percent, with fax/copier/printers by 38 percent. Trailing are interactive television (26 percent), cordless phones (17 percent) and e-mail (16 percent). (See chart 5)

Most companies (90 percent) have a web site on the Internet and for the minority that do not, the competitive pressure is clearly on full tilt. Indeed, virtually all of those without a current web site plan to have one within the next two years. The larger chains have clearly been the early adopters with the highest

rate of web presence (92 percent), while smaller independent companies still have some modest catching up — they indicate an 85 percent presence.

Features at web sites vary, but most provide product information and detailed pictures of hotel properties (94 percent and 90 percent respectively). Location maps are provided by 78 percent. Approximately two-thirds provide links to other sites and product pricing, but only 39 percent report that they take reservations on a real-time basis however.

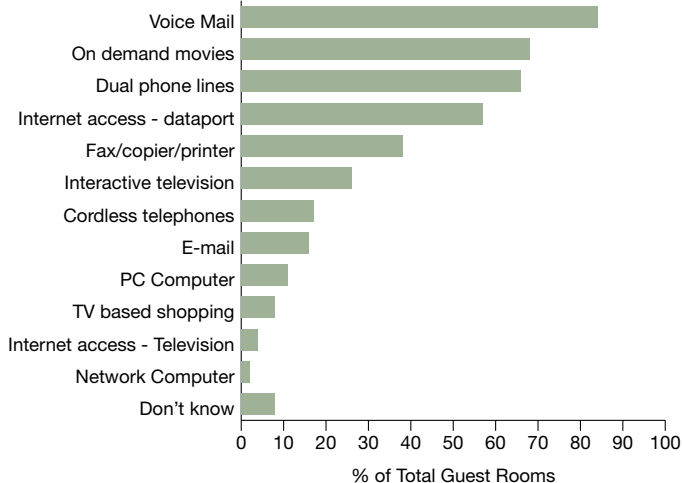
With the industry moving rapidly toward Internet offerings, the relative importance of distribution channels is set to change dramatically in coming years. Today, an estimated 4 percent of all reservations are channeled through the Internet, but this is forecast to grow to 11 percent by year 2000. Global Distribution Systems currently account for an estimated 14 percent of all reservations and should show moderate growth to 16 percent by year 2000. Central reservation systems (CRS) are projected to grow slightly from a current estimated share of 21 to 22 percent with hotel-based reservation departments (currently estimated at a 55 percent share and set to decline to 43 percent). (See chart 6)

Integrating the rooms inventory of a hotel property into a central reservation system in what is called a "single image" so that all reservation access points are showing the same status at the same time is an obviously productive deployment of technology in the hospitality industry. While today only 28 percent of respondents indicate their organizations have such a single image, some 47 percent indicate they plan to have such a system in place by year 2000. (See chart 7)

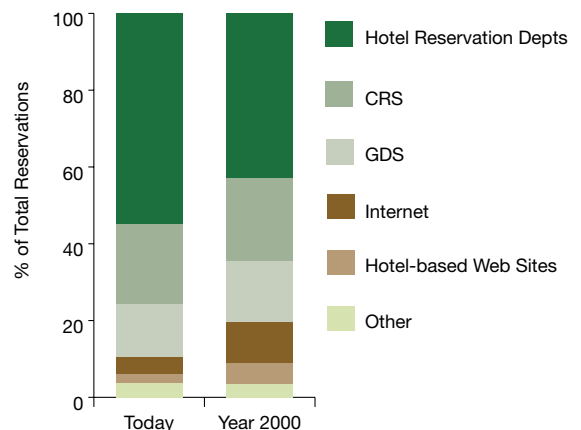
Integration of operational systems — many of which have been designed as proprietary, disparate or stand-alone applications — will remain one of the primary challenges for hospitality companies. Integrating PMS systems, which tend to be the center of the operational universe, with CRS systems, which historically have been the center of the sales and marketing universe, has been an important priority. Our executives report that approximately 68 percent of PMS systems are integrated to a CRS with this ratio set to increase to 82 percent by year 2000.

Yield management — which began life in the airline industry and has long since migrated to the hospitality business — is

**5 What percentage of your guest rooms are currently providing the following services?**



**6 What percentage of total reservations are generated and will be generated in the future through the following distribution systems?**





an important tool in the maximization of revenues. Its development has been largely facilitated with the deployment of technology against complex algorithms that track historical data and project business volumes against key variables. Of Hospitality 2000 respondents, 60 percent indicate that their organizations have a yield management system of one type or another in place. And of these, nearly two-thirds are integrated into the organization's property management system while 41 percent are connected to the CRS. For those without a system, just over one-half report plans to develop one. In sum, it is clear that yield management systems are fast taking hold in the industry.

**Customer information**

Our study also explores how hospitality companies use technology to manage the customer relationship now and what organizations plan for the future. This is an area rich in potential, and we considered a large number of issues, including how organizations will integrate disparate systems with the customer. We also looked at how hospitality organizations will collect, evaluate and utilize customer information.

Executives report continuing efforts to

integrate critical systems such as PMS and CRS. But as hospitality companies devote more attention to knowing their customers, they are considering the integration of not only PMS and CRS, but also data warehouses into fully integrated Customer Information Systems (CIS). But like the adoption of technology elsewhere in the industry, the pace is slow. Approximately 13 percent of respondents report that they have installed a CIS system; most have been introduced during the last several years. Another 11 percent have a plan for a CIS and the capital allocated (mostly for completion within the next three years). An additional one-half of respondents report having considered the development of a CIS and the possibility of putting a plan together. (See chart 8)

Such plans though can be expensive. For those with the capital allocated, approximately one-half indicate that their systems will cost anywhere from \$1 million to \$6 million with the balance reporting an expenditure of less than \$1 million. Clearly there is significant variation. For large chains, the expenditures can significantly exceed these figures, depending, of course, on the features involved and the state of their

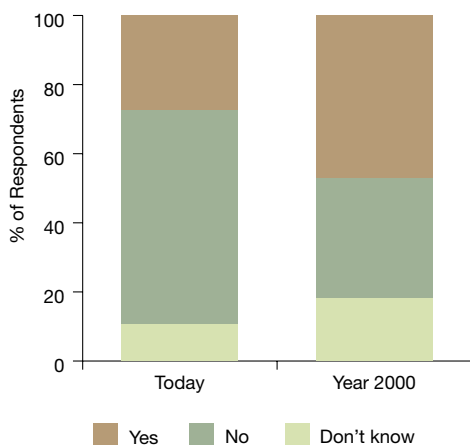
current technology particularly as it relates to consistency of systems especially at the property level.

Knowing who your customers are is one thing, but understanding whether they are satisfied is clearly another. And the profile of methods being used currently is not especially encouraging. In-room questionnaires — the industry standard for decades — remains the dominant form currently (41 percent of all applications), followed by mail surveys (27 percent), in room television surveys (14 percent), telephone surveys following checkout (10 percent) and computerized survey upon checkout (7 percent). (See chart 9)

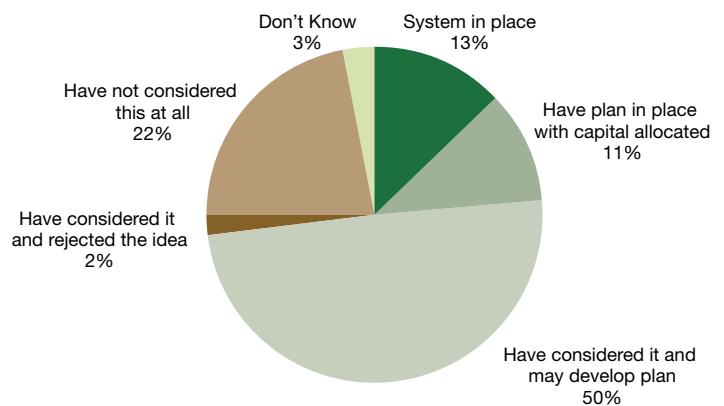
By year 2000, the distribution is expected to change with in-room questionnaires set to decline to 28 percent along with mail surveys (22 percent). Offsetting the decline is the rise of in-room TV surveys (20 percent) and computerized surveys at checkout (15 percent). Post departure telephone surveys will continue to trail at 10 percent.

The approaches to determining customer loyalty should also be of importance to those organizations that place the customer at the center of their

**7 Is your rooms inventory currently available to all users in a "single image" and if not, will it be available in the future?**



**8 Is your company considering a fully integrated "Customer Information System?"**





universe. Almost two-thirds of respondents indicate that they track loyalty and 41 percent use variations of an analysis of spending or stays, while a minority (17 percent) track points or coupon redemption. And for those not currently tracking loyalty, close to three-quarters plan to do so in the future.

As the industry develops a greater focus around the customer, the need for data-warehousing becomes increasingly apparent. In large and complex hospitality organizations, it is only with the application of sophisticated technology that customer data can be collected, evaluated, analyzed and used to good purpose. Currently about one-third of respondents indicate the existence of a data warehouse within their organization, but of those without, close to one-half indicate plans to install one, mostly within the next three years. And yet for those with a data warehouse in place, less than one-third report it being linked to an Executive Information System. This suggests that for senior sales and marketing management, access is episodic and inhibited by the need for technical help. There would therefore appear to be a large opportunity for those interested in increasing the productivity and utility of the information they collect.

Clearly, the stakes are high for hospitality organizations when it comes to investing well and wisely in technology. No organization can afford to be left in the wake on these issues. But executives surveyed seem well aware that how they invest in and use new tools and systems influences cost, effectiveness and the company's competitiveness in a technology-rich world. And as consumers choose from a growing array of hospitality products — and channels of distribution — these technologies must support a customer-focused enterprise as never before.



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## Hospitality 2000: The Technology

This article offers highlights from the just-completed global study — *Hospitality 2000 — The Technology*. It is the third in a series in the Hospitality 2000 initiative, which has been designed to define critical issues that the industry will face in the next millennium. *Hospitality 2000 — A View to the Next Millennium* identified major trends and strategic issues focused around market, product, organization, technology and capital. *Hospitality 2000 — The People* addressed organization and strategy, recruitment and staffing, training and development, performance, reward and recognition. Now, *Hospitality 2000 — The Technology*, completed this year, addresses strategy, organization, sales and marketing, customer information and operations — as they relate to technology and its future role in the industry.

### The Sponsors

Arthur Andersen LLP and the New York University's Center for Hospitality, Tourism and Travel Administration were the original co-sponsors of the Hospitality 2000 series. This year they are joined by the international Hospitality Financial and Technology Professionals (HFTP).

### The Methodology

Using the research methodology tested in previous *Hospitality 2000* studies, our study began with a broad review of the literature. A detailed questionnaire was prepared and tested, then mailed to hospitality industry executives in the Americas, Europe, the Middle East, India, Africa and Asia/Pacific. The findings and conclusions are based on 333 returns.

### The Report

In addition to a comprehensive report on the data, findings and conclusions from the survey research, *Hospitality 2000 — The Technology* showcases hospitality organizations that are pursuing cutting-edge technology innovations. These best practices are worthy of note and should be regarded as additional indications of where the industry is heading.

9 Which of the following methods is your company currently using (plan to use in the future) to track customer satisfaction?

