



A HOSPITALITY TECHNOLOGY EXECUTIVE WHITE PAPER

BUSINESS INTELLIGENCE: How Information Integration Can Boost Hospitality Growth

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Cognizant

It's relatively easy to get an overarching definition of the term "business intelligence." One hospitality industry expert puts it in terms of knowledge management: "Business intelligence is related to how a company manages anything that it knows as a company." Another expert, noting that hospitality companies routinely gather significant amounts of data about their customers, their operations and their competitors, defines BI in relation to what the analysis of that data can provide: "Business intelligence answers the question of 'why' instead of 'what'."

In an industry as diverse as hospitality, however, the challenge is less about defining BI than about determining what information is most vital to running the business—and then figuring out how to get that crucial knowledge to those who can act on it. For a restaurant chain, their most important bit of BI is likely to show the relationship of food sales to labor costs. A cruise line dependent on repeat business

and good word of mouth will be interested in gauging the customer loyalty of both actual travelers and the agents who book trips. Airlines and car rental companies will want to closely monitor their affinity relationships and the role various websites play in steering travelers in their direction.

BI'S BENEFITS

In the lodging segment, the challenges of improving business intelligence capabilities are big—but so are the potential rewards. When business intelligence is done right—when companies devote sufficient resources to BI solutions and stress its value throughout the organization—hospitality companies "can calculate, based on previous guest behaviors, whether a particular guest will be profitable to the hotel or not—even if it's that guest's first time at the hotel," says Cihan Cobanoglu, Ph.D., Assistant Professor of Hospitality Information Technology at the University of Delaware College of Human Services, Education, Public Policy,

Hotel, Restaurant and Institutional Management. Armed with this information, the hotel can offer the potentially profitable guest incentives in order to "maximize the guest's lifetime value to the hotel."

Today's sophisticated BI solutions also allow hospitality companies to focus on addressing the most crucial issues they face, and to do so more quickly than they ever could before. Top executives armed with dashboard-style BI tools that provide them with a snapshot of the company's key performance indicators, along with exception-based alerts when those indicators fall outside pre-determined parameters, can "see where the needs are and focus on intervening there," says Daniel J. Connolly, Ph.D., Assistant Professor of Information Technology and Electronic Commerce at the University of Denver's Daniels College of Business.

If these BI tools also provide executives with the ability to "drill down" to deeper reports and analysis about a particular issue, "they

"Business intelligence gives a hospitality company the ability to respond more quickly to correct things that may be problematic. Not only can companies meet problems in a more timely manner, they can take advantage of new market opportunities by seeing things faster than their competitors and being able to act on them."

– Daniel J. Connolly, Ph.D., Assistant Professor, University of Denver

could proactively change outcomes as opposed to just looking at them in retrospect,” says Connolly.

“Business intelligence gives a hospitality company the ability to respond more quickly to correct things that may be problematic,” adds Connolly. “Not only can companies meet problems in a more timely manner, they can take

advantage of new market opportunities by seeing things faster than their competitors and being able to act on them.”

He adds that BI can help hospitality companies overcome “information asymmetry”—the situation, similar to the pre-Internet days of buying a car from a dealer, when the customer had little idea of the

car’s actual price. “When hospitality companies can overcome information asymmetry and even the playing field with their vendors, they can improve their negotiating position,” says Connolly. “In addition, by improving their cost structures, they can offer rate premiums that turn into profits; they can also boost cross-selling and upselling capabilities to improve incremental revenues.”

Key Steps to Achieving BI Benefits

Hospitality companies seeking to take advantage of the benefits of business intelligence need to align both their business and information technology resources. After determining which areas of BI will be most helpful to the company in meeting its business goals, the company needs to take these steps in order to make the best use of BI, according to Daniel J. Connolly, Ph.D., Assistant Professor of Information Technology and Electronic Commerce at the University of Denver’s Daniels College of Business.

- **DATA GATHERING:** Most hospitality companies gather enormous amounts of data already—from their reservation systems, their points of sale, property restaurants, etc. To be most effective, this data must not only be collected but placed in a central repository, where it can be made available to others within the organization.
- **DATA CLEANSING, ANALYSIS AND SYNTHESIS:** “This involves turning the raw data into useful information,” says Connolly. “This is accomplished by looking for patterns and seeing outliers from the norm.”
- **SHARING/COMMUNICATING DATA:** “Some people within an organization are ‘protectionist’ with information,” says Connolly. “They take the old saying ‘knowledge is power’ to mean that if they know something and they tell someone, their own value is diminished. Companies need to open this up and let people know it’s O.K. to share information.”
- **USING THE DATA TO MAKE FACT-BASED, INFORMED DECISIONS:** In addition to addressing corporate culture issues about sharing information, hospitality companies also need to stress the value of BI once it’s available. “This way people know that they’re making decisions with a certain degree of confidence,” notes Connolly. “They’re not shooting from the hip, but acting on things because this is what the data tells us.”

OVERCOMING BI CHALLENGES

With this range of benefits, why isn’t business intelligence more of a priority in the hospitality industry? For many, it is. But a number of challenges must be overcome for companies to reap the benefits of BI:

- **Hospitality industry structure:** “There’s a distinct separation between ownership and management in the hospitality industry,” notes Mark Haley, Partner at The Prism Partnership consulting firm. “More centralized hospitality industry segments, such as airlines, car rentals and cruise ships, tend to make more of the investments needed for BI to work effectively.”
- **Dispersed data:** “The hospitality industry remains characterized by islands of information,” notes Haley. For BI to be effective, companies “need a repository of data to bring those ‘islands’ together in one place, which requires investments of time, money and technology.”
- **Systems integration challenges:** “Hotels can collect data down to the color of underwear a customer purchases at the gift shop, but without an integrated

system or a common language between systems, most data just sits where it is,” says the University of Delaware’s Cobanoglu. Indeed, respondents to *Hospitality Technology’s* 2005 Lodging Industry Technology Study identified “integrating systems” as by far their number-one information technology management challenge. The challenge has grown as hotel technologists have seen the number of systems under their control proliferate dramatically and expand to cover every aspect of hotel operations.

• **Need for user-defined tools:** “Any BI solution needs flexibility, so that each user can track what’s important to them,” notes the University of Denver’s Connolly. “It also needs to be in a format that works for them, whether it’s text-based or graphical. The tools also require drill-down capabilities, so if the CEO turns on his computer and sees that sales are down in a particular region or a property, he

can find out why—is it food, room rates, meeting rentals? BI needs to offer these types of ‘slice-and-dice’ capabilities.”

When hospitality companies can overcome these challenges, they can make use of BI tools to integrate information that, in many cases, they already routinely gather. Some examples of the information integration that’s possible with sophisticated BI solutions include:

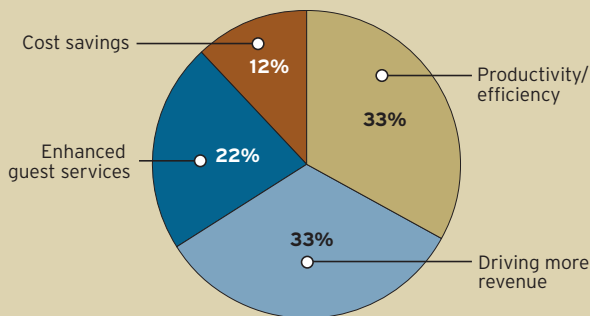
- Creating alerts that help match property staffing levels to events and expected busy (and slow) times.
- Improving yield management based on the most current booking data and rate comparisons.
- Improving marketing to members of loyalty and affinity programs, based on guests’ stated preferences about how and when they want to be contacted.
- Giving reservations and group sales managers real-time access to guest and group histories, allowing a better match of guest needs with available properties and services

(e.g. meeting space, area attractions and recreation, catering/restaurants, etc.).

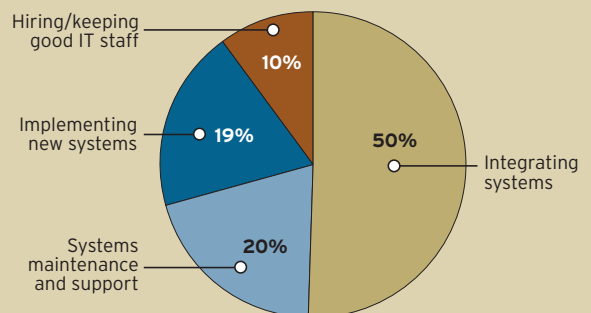
TECHNOLOGY’S ROLE

While it’s the business requirements and goals of each hospitality company—along with its corporate culture—that should determine the specific direction of a particular BI project, information technology undoubtedly plays an important role. Technology can change people’s perceptions about what’s important, according to Connolly: “Years ago, hotels might run a month-end report, and by the time it actually got back to the property, the information in it might be as much as 70 to 80 days old. By then, it’s too late to do anything about whatever happened. Now, if everyone has current, real-time access to the data, the manager may need to answer questions about his property’s numbers, and be able to think on his feet to do it.”

IT DRIVERS



MOST SIGNIFICANT IT MANAGEMENT CHALLENGES



HT Lodging Study 2005

Cognizant Helps Hotel Company with Cleaning Regimen for Data

Business intelligence thrives on data—or to be more accurate, BI relies on clean data. Data accuracy is crucial for giving BI's end users confidence that the information they're using to make key decisions is accurate. Therefore, one of the first rules of establishing a data warehouse to support BI is the old rule of computer programming: "garbage in, garbage out." Organizations must devote resources to ensuring the data they warehouse and distribute is clean, by removing as many duplications and inaccuracies as possible.

A leading hotel franchise organization recognizes the importance of data cleansing, but faces a related challenge in implementing its cleaning regimen: the sheer volume of data it must gather, house and "scrub." The company's data services group evaluates nearly two million data records each night that must be loaded into the company's data warehouse, so simply ensuring that those records are correct and usable is among the group's most daunting tasks.

Cognizant, which provides this hotel company with a wide range of IT services, manpower and expertise, was instrumental in developing the de-duplication processes that are a crucial part of data cleansing. This hospitality company discovered that it needed better ways to determine if its data warehouse contained multiple records for the same guest. The proliferation of phone numbers used by any one individual (home, office, cell, etc.), for example, made it easy for a hotel to unwittingly set up multiple accounts for the same individual. Ensuring that the property, and the larger hospitality company, matches individuals to their information requires multiple comparisons of identifiers such as phone numbers, e-mail and conventional addresses and credit card numbers.

Other challenges to ensuring data "cleanliness" arise because the hotel company gathers data from multiple sources: the hotel properties

themselves, third-party information suppliers and other business units within the organization. Once the data is cleaned, it's used by internal departments as diverse as marketing, market research and database marketing, and the company's upper management.

Even though the company operates mostly as a master franchisor, it needs clean, current data in order to understand more about operations at its franchised properties. The company handles a large amount of booking information, and needs to maintain operational and quality assurance oversight. In addition, in order to help franchisees and to market more effectively to consumers, the company needs to gain a greater understanding of guest activity and to develop accurate consumer profiles.

Cognizant has played multiple roles for the hotel company during the past five years, and the relationship is ongoing. For various IT projects, Cognizant has analyzed architectural and development requirements and helped the hotel company determine whether it should do the project in-house or outsource it. Cognizant's people work alongside the hotel company's IT staff, developing subject matter expertise as well as providing development work. In addition, the hotel company has outsourced maintenance and production support work to Cognizant.

"We help the hotel company with a variety of services, ranging from infrastructure services, application support, custom development and packaged implementations, to business consulting and technology strategy," says Thomas Rump, Client Partner for Hospitality at Cognizant. "It's been a very successful partnership, and I am glad that we are part of their success."

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note that it matches 16 of 20 requirements that the hospitality company has. Then we determine what's needed to close the gap. It could be systems integration, customization, or an additional package or module that needs to be added."

Cognizant's customized approach is crucial in the hospitality industry's lodging segment, with its sharp division of ownership and

"The question we have to answer is, what's the consistent data needed to help both ends of the spectrum be successful?"

These are actually business questions, even though they are placed in the context of technology issues.

"Frequently, what we deal with are business issues that are seeking a technology solution," says Rump.

This plays to Cognizant's combina-

be the most effective at solving the customer's issues," says Rump

CONCLUSION

Cognizant's approach—combining a thorough understanding of a company's business issues as well as its technology needs—can help address many of the challenges hospitality companies face in today's competitive marketplace. That requires a

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property management. "It's generally not a top-down technology organization at a lodging company," says Rump. "For example, in the area of front-end systems, there tends to be a lot of custom, 'home-grown' applications that have evolved through time. Many companies have also written their own reservation systems. And there are a variety of property management systems in use throughout the hospitality market."

This type of IT fragmentation can also apply within a company, he adds. "A chain may have some 400-to-500 room hotels but also some 40-to-50 room highway properties, so the property management needs for these two types of hotels are markedly different," says Rump.

tion of a deep understanding of the hospitality industry, along with significant information technology expertise and resources.

"The Cognizant business model is industry focused, with horizontal competencies such as business intelligence and data warehousing," says Francisco D'Souza, Cognizant's COO. "When there's a Cognizant team with hotel industry experience working with, for example, a hotel franchisor, we team up to create a strong relationship that provides outstanding business results for the hospitality industry client."

"We believe that by investing in the hospitality skill set that understands both business and technology, it gives Cognizant the ability to

long-term view of business strategy, according to Ron Glickman, Cognizant's VP for Retail and Hospitality. "Companies need to view their business strategy over a three to five year time horizon," says Glickman. "They need to ask themselves how they intend to grow, and what their current barriers to success are from a business perspective. Both business and IT leaders in the company must take a 360-degree view of their business requirements, as well as their current state of people, process and technology. They also need to determine the future state that they desire, and then put together a transition plan that goes at the pace of change that the business can absorb." ■

HOSPITALITY BUSINESS PRACTICE



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Cognizant (NASDAQ: CTSI) is a leading provider of IT services. Our more than 25,000 employees share one single-minded passion: Dedicating our systems expertise, industry intelligence and global resources to working closely with clients to make their businesses stronger. We combine a global delivery model with deep knowledge of how IT can improve productivity, lower costs and provide better products and customer service. Cognizant provides applications management, development, integration, infrastructure management, business process re-engineering and outsourcing, and a number of related services such as enterprise consulting, technology architecture, program management,

and change management. We are pleased to be a member of the NASDAQ-100 Index and to be recognized by *Business Week* as one of the world's premier information technology companies. Our greatest satisfaction, however, comes from collaborating with clients to leverage technology to make their businesses run better, compete harder, and win the race for the future.

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