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Sculpting Sound

Matching Acoustics and Music to Ambiance

"During the last 20 years we've seen a number of different acoustical issues in retail/ shopping areas – everything from blender noise at a juice bar in a now-defunct Mexican prototype restaurant to the "noise" from a \$15 loudspeaker pointed into the mall," says Steven J. Thorburn of Thorburn Associates, Inc., an acoustic and audio/video consultant with offices on both coasts.

The frequent misuse of audio enhancement is partly a function of its success.

Restaurant chains such as Cusi (pronounced "cozy") now offer in-store music both day and night to create a constant, "fun, eclectic atmosphere" for its "creative and craveable" foods.

"Have you heard the dance club-like sound systems in the Juniors department at Macy's or in Old Navy?" Thorburn asks. "All these uses of audio and video technology are to make the shopping experience more tailored to you, personally, and are part of the explosion of digital signage."

In restaurants, loud can be a design goal, the proprietors insist. "The owner wants the high-energy feel of activity in the space," Thorburn says. "But at what cost? How often do you revisit a restaurant where you aren't able to carry on a conversation at your table? The other extreme is the restaurant that is too quiet — where you not only hear but understand the intimate conversations of everyone around you. From our point of view, the perfect environment is somewhere between these two extremes and meets the goals and objectives of the owner."

Besides loudness, the sound system's performance – its quality – is affected greatly by the acoustics of the space. "A highly reverberant space with hard surfaces that reflect sound, for example a cosmetics area in a department store, requires special attention to lessen the impact of the sound system on customer transactions," says Thorburn. "In a department with carpeting and soft goods, attention needs to be paid to the absorption of sound, as there is not much reflection from textiles, clothing, and other soft surfaces. Spaces like this may require additional loudspeakers to provide even coverage and sufficient volume."

He adds that in a restaurant, "the selection of room finishes and table/booth arrangement is just one of the many design components that must be addressed."



The sound system at the Cheesecake Factory includes DSP audio distribution and processing equipment (IDR-8) from Allen & Heath for multi-zone programming and control. The JBL Control Contractor Series speakers were spray painted to match the ceiling and not compromise the aesthetics of the rooms.

Another major factor affecting the performance of restaurant sound systems is noise. Kitchen noise, for instance, can be a challenge, according to Thorburn: "What is the best way to keep the food preparation process noise from reaching the guest? Can we put a barrier or maze at the entrance to the kitchen? How about an open or demonstration kitchen where we have not only the food preparation noise, but the fume hood noise?"

Surprisingly, though, it is not the noise from fans and other equipment that confounds Thorburn. "We really need to look at the noise from entertainment systems," he says. "For example, the background music in a '50s burger joint might not be what people want to hear in the mall's main stage area, especially when Santa or the Easter Bunny is in town for pictures. 'Johnny B. Good' and 'Frosty the Snowman' just do not mix."

The problem in such cases is quantity as well as quality. An unforeseen result of the popularity of retail audio systems today is that they can interfere with one another to produce a distracting – and counterproductive – cacophony. Instead of the desired outcome of enhancing the environment, an overabundance of sound can instill anxiety and confusion in consumers.

"Nowadays, many retailers are using audio and video technologies to help enhance and tailor the shopping experience," Thorburn says. "Customized content based on location and demographics is being delivered to customers using displays and devices once thought only available to NASA Mission Control: video walls and plasma displays. Demand for high-quality audio, propagated by the widespread use of home theater sound systems, has encouraged the use of better quality distributed background-music systems and, in many stores, high-end foreground music systems."

At Cosi restaurants, custom music programming is "intended to cast the appropriate mood for each period of the day, reinforcing the Cosi brand as a vibrant place day and night," according to music service provider PlayNetwork. The sandwich-and-coffee bar alters its music according to the time of day. For example, it plays "pick-me-up" music for its 6 a.m. to 11 a.m. customers and distinctly different tempos for the lunch, afternoon, dining, and late-night crowds.

In addition, PlayNetwork said it developed programs according to the location and "theme" of each Cosi store – college campus, mall/strip mall, suburban, urban, and an urban/suburban hybrid. By "customizing to key demographics including groups of families and young, hip adults," according to PlayNetwork, "Cosi's music style became a daily cycle of variations among eclectic, groove and rhythms, world cultures, adult alternative, light singer/songwriter, contemporary, and classic cross-generation rock."

This classification of music into artificial genres intended to please demographic groups is nothing new to today's consumer. Cable companies provide music channels for subscribers that are arranged in a similar fashion. Moreover, "the Internet and technology revolution of the past two decades has placed MTV, DVD, MP3, and DSS into many homes in the United States," Thorburn observes.

"Sound, like lighting and other visual stimuli, evokes emotion and can define an environment. The music and sounds in a retail store or restaurant, along with the visual design, set the mood and create a comfortable environment for customers and employees. What many retailers like Starbucks, Bloomingdale's, and Macy's have discovered is that they can increase the amount of time a customer spends in a store or restaurant and, in turn, increase sales by enhancing their environment with a high-quality sound system."

"As a design tool," reports PlayNetwork, "audio sets the mood of a store and can cause people to tap their toes and think, This place just feels right." Conversely, "when an audio system isn't right, the result is so subtle that customers leave, and they don't know why."

"Customers may not even identify that the sound isn't right," adds John Stiernberg, principal analyst for Stiernberg Consulting, which is conducting a study with Merchant Mechanics on the business impact of quality sound in retail environments. According to Stiernberg, store décor often fails to accommodate all of the five senses that combine to define what customers enjoy or dislike in an experience, particularly the sense of sound.

"The reality is that most in-store systems are not making today's grade for quality sound," PlayNetwork asserts. One reason for that, the company says, is the absence of industry standards for the design, installation, and performance of business music systems. Moreover, the company adds, "no apparent study has expounded on the indirect discovery that the way sound is delivered can fall short of eliciting an intended response from an audience and enhance the experience."

Robin Sibucão, CEO of PlayNetwork, says there are four basic criteria that distinguish quality sound for a business:

1. Sound Pressure Level – The volume requirements for the store, with enough energy and presence ... for a specific demographic.
2. Coverage – Sound should be as even as possible without hot or dead spots unless specified in the collaborative planning meetings.
3. Voice Intelligibility – Clear and distinct messaging with voices that sound natural.
4. Tonal Balance – Continuity between bass, mid-range, and high frequencies.

From the retailer's perspective, says PlayNetwork, a quality sound system must prove its worth in objective terms as well as in subjective terms. As examples of objective measurements the company cites:

- Increased sales
- Increased average sales ticket or transaction value
- Increased profits through sales of high-margin products
- Higher employee productivity and retention
- Decreased operating expenses

"As with all technology systems," says Thorburn, "the true success of a retail media system begins with understanding the system goals and objectives – as well as the target audience – and then designing the space and the technology. How are music and other sound elements currently used in the business environment? Will the system primarily be used for paging and announcements? What are the goals to be achieved from the experience?"

"Running down to the local stereo shop and picking up a pair of loudspeakers and monitor does not meet the quality many shoppers have come to expect, and even demand."

Sources for this article include e-newsletter (May 2004) from Thorburn Associates inc. (www.ta-inc.com), "Establishing quality sound in business environments" by PlayNetwork (www.playnetwork.com), and Stiernberg Consulting (www.stiernberg.com).