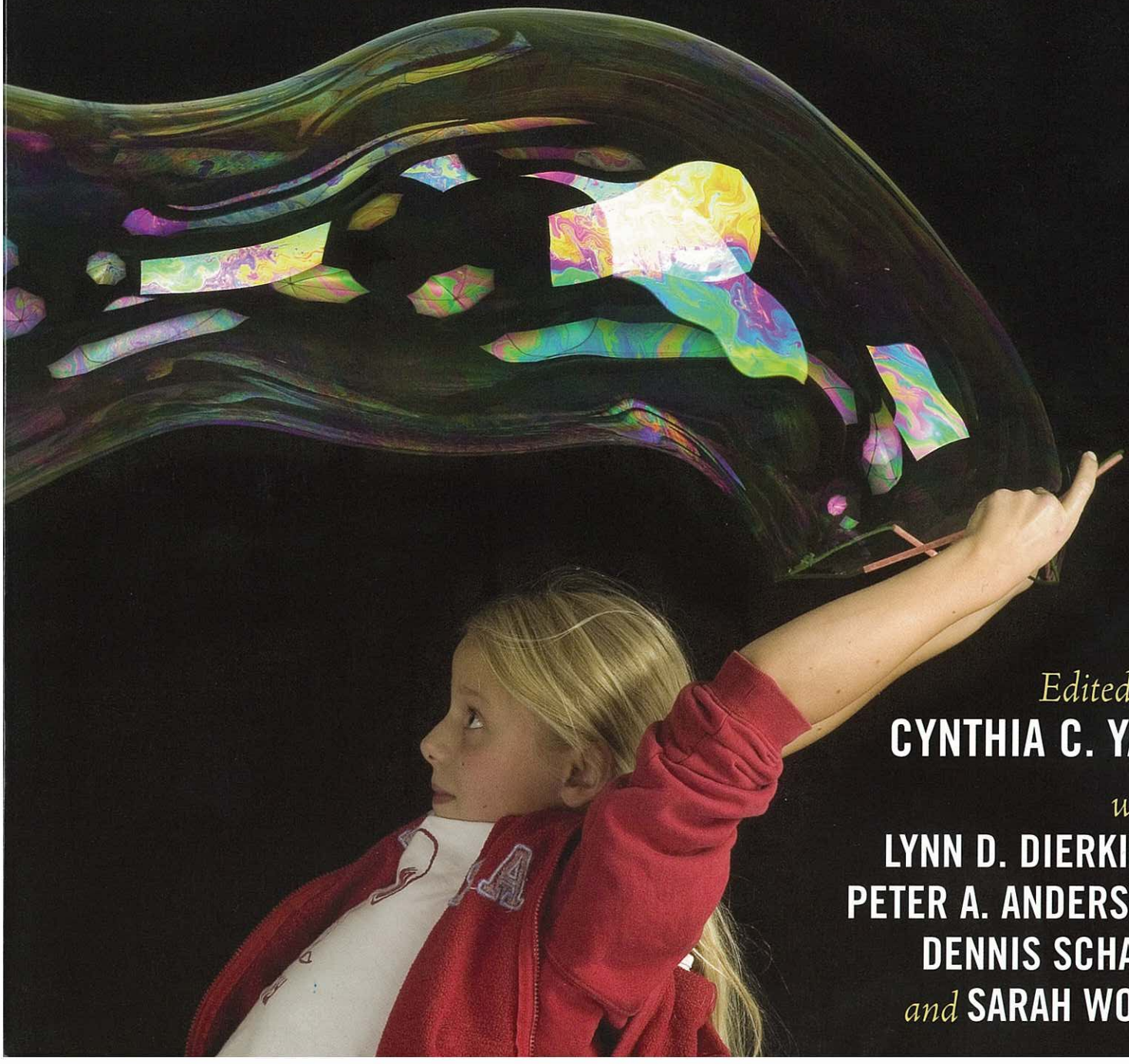
Handbook for Small Science Centers



Edited by
CYNTHIA C. YAO
with
LYNN D. DIERKING
PETER A. ANDERSON
DENNIS SCHATZ
and **SARAH WOLF**

CHAPTER 17

Decision Making on Purpose: Translating Organizational Identity into Effective Experiences

HANDS ON! INC.

HOW DO YOU GO FROM AN ABSTRACT IDEA TO A finished exhibition? Many new museums are working hard to develop missions, core values, and strategic goals for their institutions. It can be hard, however, to take those philosophical foundations and translate them into concrete visitor experiences.

NEED FOR A STRONG DECISION-MAKING FRAMEWORK

Effective exhibitions are part of making a museum sustainable. In our experience, the key to effective exhibition planning is the creation of a strong decision-making framework at the beginning of the process. Before we design anything, Hands On! works with a museum to develop a set of criteria that will guide all decisions in the exhibition development process. These criteria form a tangible framework that gives shape to the mission, values, and goals of the museum. They might build on work that the museum has already done, or we might start from scratch to create them together. We have found that with this framework complete, every member of the development team has a shared vision of the final exhibition through which all ideas can be filtered.

A strong decision-making framework created at the beginning of exhibition planning does the following:

- Allows the team to focus creativity to an effective end
- Supports sustainability by increasing the efficiency and astuteness of decisions
- Builds consensus and trust among team members that is reflected in the quality of the final exhibition and supporting elements
- Gives the museum team something that can be articulated with confidence when communicating with key stakeholders and potential donors
- Narrows the task at hand so that the team stays focused on priorities rather than side issues
- Gives outside consultants such as exhibit designers and architects clear guidelines
- Helps reduce the last-minute crisis management and remediation that sap the energy and budgets of many projects

So how does a museum—small, medium, or large; new, expanding, or rejuvenating—build a framework for good decision making? There are countless ways to do it, as we've discovered in our work with museums such as Great Explorations; the Children's Museum in Florida; the Telfair Museum of Art in Georgia; the Fort Worth Museum of Science and History in Texas; and on the traveling exhibition RISK! for the Science Museum Exhibit Collaborative (SMEC). One of the most comprehensive examples of the framework building process is the collaborative work done by Hands On! and a new interactive learning center in Belfast, Northern Ireland, whowhatwherewhenwhy:W5.

W5: AN EXAMPLE OF TRANSLATING IDENTITY INTO EXPERIENCES

W5 is a unique interactive learning center located in the disused docklands of Belfast. It is one of the most tangible symbols of Northern Ireland's transformation—a $35 million statement about the kind of city that Belfast wants to be. Funded in part by the U.K. Millennium Commission, a government agency funded by lottery money, W5 and the multipurpose entertainment venue it anchors represent the largest urban development project in Ireland, north or south, and the only major U.K. Millennium Fund project in Northern Ireland. Because of its size and its location in a region best known for civil conflict, expectations were high and scrutiny intense. What could W5 do for Northern Ireland? After an intensive international search, the project developers called upon Hands On! to answer that question.

To create W5, Hands On! worked with a small development team that included Sally Montgomery, PhD, the museum's director. A select group of collaborators from the museum field joined us from time to time to respond to ideas at critical stages. The building architect was also included, allowing us to work together to make sure that the building meshed well with operational and exhibition needs. Surprisingly, we found that the small size of our development team, supplemented by additional resources when needed, made working on this large project very efficient. Decisions could be made quickly to keep the many tasks on track. Although this medium-size museum has 36,000 square feet of exhibition space, the process shared here can be applied to projects of any size.

AT THE CORE

At the start of the project, W5 had a conceptual outline, used for fund-raising purposes. The development team's first key decision, however, was to set that outline aside and take the time to really consider why we were making this museum. What is its core ideology, its reason for being? The core ideology would define the museum's purpose and form the foundation of every decision. As Montgomery put it recently,

> How do you know what kind of exhibits to have or what kind of museum to form if you don't know what and who you want to be? Creating the core ideology gave us the confidence to find designers and staff that fit with that core ideology to create a cohesive museum. It also took away decisions dominated by personalities. 'I want to do it this way' discussions became 'Does this fit with our core ideology?'

This change meant that the museum was about serving visitors instead of our individual interests.

Unlike a conventional mission statement, which can be sentences, paragraphs, or pages long, the core ideology of W5 was limited to a few essential words. A short, clear statement would be memorable and have impact, increasing the likelihood that the team, the stakeholders, and future staff could take ownership of it.

The team worked with organizational coach Roy Shafer to develop a decision-making framework, beginning with the core ideology. To craft the core ideology, the team first considered two main aspects of science—its existence as a summative body of knowledge and its function as a human process of discovery on which that body of knowledge hinges. Discovery, questioning, and experimenting are all creative processes, fundamental to the growth and change of scientific knowledge. But these processes are equally fundamental to other disciplines and, in fact, to the definition of what it is to be human. Because of its potential depth and transformational nature, the group gravitated toward the idea that engaging people in a process of discovery should be a key aspiration for W5. The museum would do something inspirational to and with visitors. W5 would "fire the spirit of discovery." We had half of our core.

Realizing this was still an abstract concept, the team knew it still needed to go a step further and define the other half. What would our core business be? How would we pursue our aspirations, our core ideology? How would W5 carry out this idea of firing the spirit of discovery? When the team explored the idea of discovery and discussed science as a process, we saw that people already have varied scientific skills, many of which are usually unrecognized as relating to science at all. If we were to fire the spirit of discovery in people successfully, the museum could help people discover that science relates to them because they already practice the processes of science—questioning, observing, experimenting, predicting—every day to understand and navigate the world. We would "unlock the scientist in everyone." W5 would fire the spirit of discovery by unlocking the scientist in everyone.

The team then spent time defining the values of the museum, or the essential principles that underlie the core and, therefore, all decision making. As a start-up, W5 could only have "strategic" values, principles defined by specific behaviors that everyone—from the design team to the floor staff—could understand and express. As the museum came to life, it would embed those values and behaviors into its core. For W5, the strategic values were determined to be "innovation, imagination, and integrity." W5 will fire the spirit of discovery by unlocking the scientist in everyone through innovation, imagination, and integrity. We had our core ideology and strategic values, the base of a decision-making framework on which to build the museum.

LOOKING AT OUR AUDIENCE

Like many museums, W5 would be an intergenerational social space, attracting people of all ages. Focus groups underscored the particular importance of this idea; from the youngest to the oldest, spending time with family and friends was cited as the most important thing to the people of Northern Ireland. The museum

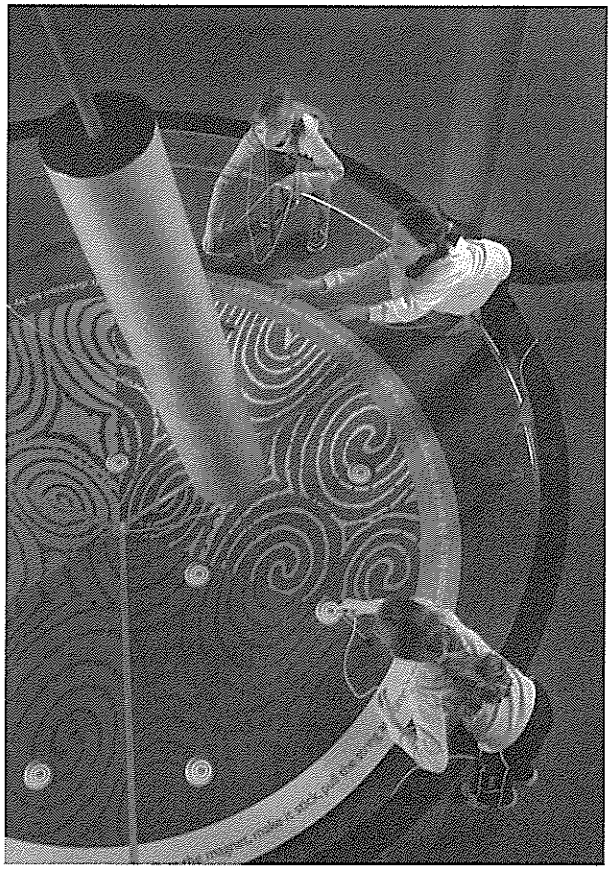


Figure 17.1. Magnetic Pendulum, W5, Belfast, Northern Ireland. People work together to move this giant pendulum with nothing but the force of tiny magnets. Photographed by Oscar Williams.

needed to serve a broad section of this often-divided community in a comfortable and welcoming way.

The development team felt, however, that more specifically defining our target audience would help us determine the specific spin for the exhibition, which would manifest itself in the overall design and content of the experience. In the case of W5, a special exhibition area had already been set aside for children under eight; that audience would not be a primary focus outside that space. Focusing on the nine-to-eleven age group helped the team better envision the level of design sophistication, the types of activities, and the depth and breadth of content for the remaining exhibition areas. This more specific target audience became another layer of our decision-making framework, refining the way the team approached the exhibition plan.

PERSONALITY MATTERS

To support the core ideology and appeal to the target audience, the W5 development team had to consider the nature of the science center. If the museum were a person, what kind of personality would it need to convey to visitors to achieve its goals? We have all visited places and described them in personal terms—friendly, arrogant, fun, cold, cultured. The development team defined a character that would guide the nature of the exhibition spaces and experiences, the employment of staff, daily operations, the relationship of the museum with its visitors, and the museum's presentation of itself to the public.

To identify that personality, we looked at some faces in magazines, chose an evocative one, and described the personality traits that attracted us to that image. We focused on words we felt best expressed the core ideology of the museum: approachable, authentic, humble, experienced, thoughtful, gentle, respectful, open, kind, supportive, moving, beguiling, magnetic, unselfconscious, classic, and full of joie de vivre. Of these, "moving" rose to the top as the most essential. These traits became benchmarks against which we checked each aspect of the exhibition and environmental design as it developed.

Our team went further by defining three specific characteristics of an exhibition environment that would successfully support the core ideology:

- a physically, emotionally, and intellectually compelling space that is attractive, engaging, and transforming for visitors;
- a personal space where visitors feel welcome and comfortable trying new things; and
- an environment that has a sense of belonging and a regional appropriateness that helps distinguish it from other science centers in the world and helps visitors make connections between their museum experience and everyday life.

We also countered these three ideas with a list of qualities to avoid—ones that would ensure that the core ideology and business would not be achieved: boring, monotonous, predictable, mediocre, ugly, dogmatic, didactic.

AN APPROACH TO LEARNING

The core of W5 focused on discovery, using science process as an entry point to the excitement of finding things out for oneself. With that in mind, our team needed to find an approach to learning and content that supported that idea. This "educational philosophy" would be another layer of our decision-making framework, helping us develop exhibits, labels, and programs, and guide staffing throughout the museum.

At W5, the most important thing we could help people understand was that science relates to them because they already practice the processes of science every day. The skills used in the pursuit of scientific knowledge are the same life skills and thinking skills that help us understand the world and each other. W5 would help people recognize the life skills and thinking skills they already have and help them learn to use them to discover new things about the world and themselves. Through this, we could unlock the scientist in everyone and open people to the excitement of discovery.

Choosing the development of life skills and thinking skills as our educational philosophy also meant that we could broaden the subject matter of our exhibits beyond traditional science fields. Focus groups in Northern Ireland showed us just how important a factor this would be in attracting a broad visitorship. Historically, the Catholic community in Northern Ireland has felt more comfortable with the arts, while the Protestant community has felt more comfortable with the sciences. At W5, we would try to achieve a balance between those two foci, so everyone could feel comfortable and have an entry point to explore ideas.

In creating our educational philosophy, we also considered the museum's sustainability. Northern Ireland has a small population, and repeat visitation would be critical to the museum's long-term success. Open-ended experiences, in which the visitor's actions determine the outcome, would give the museum a good chance at maintaining public interest; people could come back repeatedly and have a different experience without significantly changing the exhibit base. The focus on life skills and thinking skills supported this kind of open-ended approach because each person would bring a unique set of skills and experiences to the museum.

MAKING DECISIONS

Our development team now had the foundations of decision making built—filters that took into account the museum's overriding mission, the people it would serve, the character it should express, and the way it would help people learn. This framework had been developed over the course of a few short months. Now it was time to pull the original outline of the museum off the shelf and compare it with the new concept.

W5 had initially been conceived as a science center organized into four thematic areas called Communication, Energy and Motion, Ourselves, and The Changing Earth. Because our decision making tools were clearly thought out and expressed, it was reasonably easy for the team to decide that this organizing strategy seemed too limiting in its subject matter orientation. It was perfectly possible for people to have great discoveries following this more traditional model, but we felt we might be fighting people's preconceived notions of science as a compartmentalized body of knowledge. The team made the tough, but exciting, decision to throw out the original plan and start fresh, using our decision making framework as the guideline.

What might fire the spirit of discovery and unlock the scientist in everyone? The development team brainstormed multiple organizing strategies that reflected the personality of the museum and focused on process and life skills. The final result was an organizing strategy of five major experience areas that supported the core ideology: WOW (a small introductory area in the lobby), START (the area for children eight and under), and GO, SEE, and DO (the main experience galleries). These simple action words implied that W5 was a place about doing something, focused not on facts but on a process of discovery. Within these areas, we could provide experiences for visitors that crossed all subjects, including but not limited to the original content themes, and underscored the interrelated nature of all areas of learning and discovery. Visitors would be encouraged and trusted to make their own connections and discoveries within this exhibition structure.

This organizing strategy was a turning point for the development team, opening up the project to many possibilities. We used our previously defined personality traits to give each area its own character, while staying within the sensibility of the museum as a whole. GO embodied "joie de vivre," SEE was "beguiling," and DO expressed "authenticity." WOW was "magnetic," while START was "approachable." Our decision making framework guided the planning of a highly open-ended exhibit base, helping us develop and edit our ideas. It also inspired the approach to design, choices in color and materials, labeling, communication styles, and the development of programs.

GO, SEE, DO

With our organizing strategy and key personality traits defined, Hands On! conducted a series of charettes (brain-storming sessions with the project team) to establish the design direction and environmental feel for the GO, SEE, and DO areas. The energetic give and take in these sessions allowed ideas to percolate from a wide range of sources, and our decision-making framework helped us filter out the best matches for our core. Inspiration came from artists, designers, actors, educators,

journalists, and perhaps most important, the citizens of Northern Ireland. Through focus groups, for example, we learned of the strong political connotations of color in Northern Ireland. This led to a palette that avoided those associations but still belonged to the physical character of the country. One of our favorite inspirations was an exotic beetle whose intense hues brought to mind the colors of Belfast—the greens of the mosses and the reds of the bricks. Paints and stains at W5 were matched to the "beetle palette" to create a beautiful, slightly off-kilter space still in keeping with the city surrounding it. Other inspirations were equally odd—a handbag, a cocktail napkin, even a toothpaste tube collection. Language, film, theater, and an abundance of specially commissioned contemporary artworks found their way into the mix of exhibitory and environmental elements to create a space where visitors are emotionally engaged and challenged to fill in the blanks.

The first and largest of the three main galleries, GO was purposefully designed to leave open spaces where groups can gather and choose a destination. Large-scale kinetic centerpieces anchor the space visually, provide clear points for navigation and gathering, and add excitement and an expression of the joie de vivre that this area was meant to embody. As the visitor moves farther into the space, the environment becomes denser. Sightlines and custom walls create a visual and spatial progression toward the pointed glass "prow" of this ship-shaped space—a visual celebration of the city that overlooks new waterfront development and a revitalized city center.

SEE, with its emphasis on perception, was oriented more strictly on the column grid of the building. In contrast to the open informality of the GO area, visitors enter SEE through four monumental arches. Using this play on classical formality, people gain a multisensory understanding of perception by moving through these frames and seeing how they define and alter space. Secondary placement of objects, openings, and sightlines introduces a sense of unpredictability and surprise that contrasts with the order established by the archways.

DO, devoted to creativity and "making," is the most experientially dense of the three areas. Small-scale worktables and a material-rich environment inspire invention and invite visitors to collaborate and communicate. Central to this space is a structure that is used by the staff as a preparation and demonstration area, and by visitors as a critical gathering point. This structure embodies the sensibility of the DO area, possessing a "built" quality with all elements expressed as part of its overall visual order.

Together, GO, SEE, and DO create an experience in which the visitor is in charge of the outcome. The exhibition encourages the use of imagination, communication, and collaboration in a population eager to turn outwards and emerge onto the world stage. The result is a social space that is friendly yet sculpturally elegant, refined yet relaxing, international yet respectfully local.

FEELING THE EFFECTS

The decision making framework also had an impact beyond the design of the exhibition. The museum's

Figure 17.2. Lever Tug, W5, Belfast, Northern Ireland. There's an advantage to good leverage, as visitors discover in this experience. Photographed by Oscar Williams.

original title, The Science Centre at Odyssey, no longer seemed appropriate to the development team in light of our much clearer vision of what this place could be. Working with a public relations firm, The Attik, in London, Montgomery developed a completely new identity for The Science Centre at Odyssey that reflected the ideas of questioning, exploring, and discovering; whowhatwherewhenwhy:W5 was born. The framework was also applied to marketing, staff hiring, and the selection of traveling exhibits to support the permanent exhibition platform.

As the project developed, we discovered that, because we had taken the time to build a clear framework at the beginning of the project, many of our later decisions had already been made. We could focus our efforts in the right direction and spend our time and money purposefully. Whenever we felt a little lost, we could check back with the decision making framework and determine whether we were on track, before a crisis set in. The result was a cohesive museum that opened on time, on budget, and to great success as a social learning space where people feel welcome and supported in the discovery process.

Since opening in March 2001, W5 has spearheaded a trend to marry science and art in dynamic experience, leading the *New York Times* to declare the design "an approach that straddles the line between science exhibit and installation art." Learning is embedded, rather than being the experience itself. Because of the early development of the decision making framework, Montgomery feels the team was able to "create an environment for all families and communities in Northern Ireland to enjoy—one that is mysterious, highly motivational, visually exciting and, most importantly, enjoyable and educational." In 2002, the cohesiveness of the design that resulted from our decision-making framework was recognized with a Gold Award from the Industrial Designers Society of America, placing the modestly budgeted W5 in the same ranks as the U.S. Holocaust Museum and the Rose Center for Earth and Space at the American Museum of Natural History. The Institute of Designers in Ireland also honored W5's exhibition design in its annual design competition.

The public response to the project has been overwhelmingly positive, confirming W5's role as a unique cross-community meeting space. W5's opening year saw 245,000 visitors in a country with a population just shy of 1.6 million. Repeat visitation has remained strong, particularly in the critical family and teen markets. As a mark of this success, W5 was awarded the Northern Ireland Tourist Board's Visitor Attraction of 2002, and was runner-up for the Chartered Institute of Marketing's award for new business marketing. W5 has also experienced increasing tourism from Europe and North America and has hosted several European science conferences—groups that would never have considered Belfast a destination prior to the success of this flagship facility. As one of the most successful Millennium Projects in the United Kingdom, W5 should continue to move people to laugh, wonder, think, and put aside their differences.