

Plenary:

Creating the Future—The Role of Science Centres

Linda Conlon, Director, Centre for Life, Newcastle, United Kingdom (moderator)

Dennis Bartels, Executive Director, Exploratorium, San Francisco, United States

Alan Brien, Chief Executive Officer, SciTech, Perth, Australia

Sylvia Singer, Museo Interactivo de Economía (MIDE), Mexico City, Mexico

Moderator Linda Conlon introduced the panelists, who represented a good global sweep of science centres of different sizes. She invited them to respond to Jennifer Corriero's keynote presentation and, more holistically, to examine how the science centre community worldwide can meet some of the challenges that have been articulated.

Dennis Bartels, from the Exploratorium, noted that a real shift is taking place away from thinking of people, particularly young people, as consumers, and towards thinking of them as citizens in their own countries and as global citizens. "We've been turning them into consumers—consumers of music, consumers of entertainment, consumers of science—and they're saying that they don't want to be consumers of other people's stuff; they want to be actors on the world stage."

He noted that young people are not really using technologies in schools because they find the filters and restrictions too prohibitive. Instead, they are using technology for school but accessing it outside the institutions. "The Internet provides connective tissue that was never there before, but there are still questions about how it comes together in physical space; that's why science centres are still viable."

Bartels also asked how new employees raised in this technological era will change practice within science centres. "Do our old modes of communication still work with a generation of technologically empowered young staff who think nothing of sending an email to the CEO?"

Alan Brien, from SciTech in Australia, stressed the importance of some of the simple messages from the morning's keynote. "There's a balance between the importance of technology and the excitement of young people as they discover a world beyond their local environment. At a basic level, these are still young people learning about coping with life."

It would be helpful to share experiences about the times when technology does not work and how those challenges have been met, Brien said. "Face-to-face interactions are still essential ingredients, whether in a cosmopolitan city or in some remote place where subsistence itself is an issue. Technology is not an equal factor in everyone's life."

The key message that Sylvia Singer, from MIDE in Mexico City, took from Jennifer Corriero's address is the importance of youth language. For years, exhibits were designed to portray scientific facts, usually from the designers' point of view. It is important to consider the audience in the equation—how they think, how they talk, what their language is, Singer said. The World Wide Web does not just establish the setting for interactions; it also helps define the style.

Singer also stressed that young people want to participate directly in the construction of knowledge. "Internet strategies are so successful because we all want to have a say ... not just to convey content but to create opportunities for people to express their own opinions and build their own content," she said. "Science centres are places where people gather and visualize not just the topics themselves but their experiences of them."

While technology is both a blessing and a curse, Linda Conlon said, it is obviously a tool that must be used to make science as accessible as possible. It is difficult to secure and maintain relationships with young audiences. Hearing about TakingITGlobal inspired her to consider ways to think and act globally around the role of science centres in building the future, sharing dreams, visions, and aims of particular institutions but also moving forward as a global community.

Bartels asked delegates to consider the moral imperatives of the existence of science centres. Historically, the institutions were founded as part of a commitment to general science education in the wake of the Second World War, driven by scientists and politicians who agreed that "science is much too important to leave to scientists and politicians."

Science and technology are the currency of our times, Bartels said, and right now access to scientific knowledge is not equitably distributed. One of the most important roles of science centres in the current context is to redistribute access and opportunities so that science and technology do not create more divisions but bring us closer together. "It's not for us to tell people what to think, but to encourage them to think for themselves ... encourage them to ask the next important question."

If science centres continue to be venue-focused and cash-register-driven, they run the risk of becoming obsolete, Brien said. Tremendous skills are present in the centres, but they need to be more broadly applied. It is important to link young people with more global and cross-cultural opportunities. "Science centres must use their influence more strongly. We need to be able to work effectively with the political structure, the formal education institutions, scientists, and the local community to deliver positive outcomes for society."

"It's important to understand that technology is a tool that allows us to connect and interact," Sylvia Singer added. "But the richness comes from human interactions... Technology is not a panacea. There are still large groups around the planet who are out of touch with technological advances."

Science centres need to stop seeing themselves as places where people come to interact, Singer said, and focus on creating capacity for reaching out beyond the venues in ways that will multiply their impact. Technology is an enabler of outreach, but it cannot be the only ingredient.

Discussion

The moderator invited morning keynote speaker Jennifer Corriero to join panelists to take questions from delegates.

Panelists discussed some of the ways in which unequal access to technology can be addressed. Cell phones are much more widely available than Internet access, participants noted. Several initiatives use text messaging and cell phone interactions as a way of reaching more people. “The tools that science centres have should be used to design material to allow groups without access to technology to do their own thing, then send it through a hub that has the appropriate technology,” Singer suggested. “It’s important to maximize the technology that is already there.”

A delegate observed that science centres and universities have always been the mediators of knowledge but that the most powerful role of the Internet is as “disintermediator,” in that it allows people to interpret information without mediation. He asked the panel for opinions on the implications of this evolution.

Corriero said that science centres, like universities, need to become places where people learn *how* to think, not *what* to think.

Bartels described the role of the institution in the wake of the deinstitutionalization of learning. He challenged participants to create extended learning experiences. “There may be a role for us in training scientists to be better communicators and helping the public to interpret what they learn.”

Brien questioned whether science centres had become “dinosaurs whose relevance will diminish over time.” He emphasized the importance of moving beyond the venue to engage broader audiences over wider dimensions by drawing the science community closer to the public. Some approaches might include festivals, wikis, weblogs, and science fairs. A delegate agreed, noting that the challenge is to build an open-source network of multi-dimensional entities that will be the science centre of the future.

Singer cautioned against adopting technologies for their own sake. In a society that communicates so freely, the science centres’ role should be as generators of questions and creators of content, of visions, of possibilities, rather than just bringing in the Internet and trying to create new networks. Corriero agreed, noting that it makes more sense to use the existing networks instead of focusing on building new open-source networks. “The challenge,” she said, “is to transform and leverage the venues that exist.”

Another delegate said, “Science centres may need to think in terms of acting as flexible forms that interact with other modes and networks. We are very good at dealing with the individual but not very good at building collectives. We need to think about how institutions can use their expertise as cultural capital that will work with other institutions.”

“One of the problems we face is the lack of alignment between the science and technology issues that are in the news and those we deal with at our science centres,” a delegate said, “whether it’s the geology, engineering, and psychology of natural disasters, or what happens in the human brain that makes it impossible to get along, or famine in Ethiopia, or overfishing of the oceans, or the lack of food, or the have / have-not divide itself.”

Those challenges make engaging in contemporary science and societal issues so important in the evolution of science centres, panelists agreed. “Because young people are growing up with a greater awareness of the scarcity of resources and the issues of our time,” Corriero said, “the role of science centres must be to increase understanding across different sectors so that people can connect with government, industry, formal education, and other communities—more of a convenor than a simple educator.”