When you think of the Exploratorium, what comes to mind? Craning your neck at the soaring rotunda outside the Palace of Fine Arts? Marveling at the infinitely fractured colors of Sun Painting? Trying to wrap your arms around the Tornado? For over a half million visitors every year, these sights and experiences are the beginning and end of the Bay Area's premier museum of science, art, and human perception.

But outside the Exploratorium’s four walls, the museum’s influence has touched every continent on earth. Over the past several decades, the Exploratorium has worked with climate researchers at the South Pole, scientists from NASA studying the atmosphere of the sun, and Tibetan monks integrating scientific phenomena into their teachings. Building on these and other examples of the museum’s programmatic work, Exploratorium Global Studios extend and multiply the museum’s impact via partnerships with governments, museums, and other public and private institutions around the world.

A LITTLE BIT OF HISTORY
When Frank Oppenheimer founded the Exploratorium in 1969, he did so with the belief that science is for everyone, and that people should own their own learning process. The museum would provide a place for people to explore and, in doing so, gain a deeper understanding of natural phenomena. Since the beginning, the museum has shared its resources with the public and the wider world. As Adam Tobin, Associate Director of Exploratorium Global Studios, says, “We’ve been open source since our founding. And in many ways, you could argue we’ve had such a profound impact because we are open source.”

This open-source philosophy was first made manifest with the publication of a series of three exhibit fabrication “cookbooks,” which shared the Exploratorium approach to learning and laid out how to build the phenomenon-based exhibits for which the museum is famous.

To some, this may come as somewhat of a surprise in a country that prizes intellectual property rights and stringent copyright laws. Quite the contrary, says Sam Dean, who heads up Museum & Educational Partnerships, “We’re really good at creating authentic experiences based on the interaction between the person and the phenomenon. We choose to lay bare the mechanisms. We want people to experiment for themselves, to craft their own ideas and experiences.”

The exhibit cookbooks, published in the late 1970s and early ’80s and still in print today, proved to be a hit. Countless organizations and individuals created their own exhibits based on their instructions. But before long, with the explosion of science centers both domestically and internationally in the 1980s, it became clear that certain organizations were looking for more than just exhibit schematics. The Exploratorium’s Exhibit Services department was created to meet this burgeoning need, and began to fabricate copies of the museum’s exhibits for sale and rental to other organizations.

Providing exhibits to like-minded institutions has been one way for the Exploratorium to make its mark around the world. Providing professional development to museum staff at all levels has been another way, largely through a program called ExNet, launched in 1999. Through this innovative program, museums learn how to create long-lasting strategic change, how to use exhibits as teaching tools, even how
to integrate Explainers into their own museum programming.

In 2010, the museum’s approach to sharing expanded once more, into what is now called the Exploratorium Global Studios. The far-reaching work of this group includes museum master planning, exhibition planning and development, and ExNet, as well as experience design and professional development outside of traditional museum environments such as parks, libraries, farmer’s markets, corporate campuses, and hospitals. As Sam relates, “Our partners aren’t just consumers of our products. They’re co-thinkers and collaborators...we bring to bear all of our resources here at the Exploratorium, as well as those of our extended network of friends around the world, and that’s really exciting.”

The beauty of Exploratorium Global Studios is that the work happens farther upstream and with much greater impact than simply delivering exhibits. “We already sell our exhibits around the world,” says Adam. “Combining exhibit fabrication with planning, design, and professional development—it’s like the old adage about giving a person a fish versus teaching them how to fish. We’re doing the latter.”

FROM CHILLY FOG TO DESERT SANDS

One of the most exciting partnerships to come out of Exploratorium Global Studios is a recent collaboration in which a fully realized version of the Tinkering Studio™ blossomed in Saudi Arabia. This project is a wonderful example of how the Exploratorium is leveraging its intellectual capital, environmental design skills, and professional-development expertise to bring its philosophy of informal science education to unexpected places around the world, with life-changing results.

In June of 2012, the Exploratorium brought the Tinkering Studio to Al-Khobar, Saudi Arabia, as part of Saudi Aramco’s Summer Cultural Program, which included a five-week-long science festival. Far from the chilly summer fog of the Bay Area, the Tinkering team trained a group of 16 Saudi facilitators—both men and women—to guide visitors through the process of making, building, hacking, investigating, and inventing their own projects.

From the beginning, the team had to deal with a challenging physical environment that included temperatures that rose to nearly 120 degrees. The sun was so intense that butcher-block tables cracked and rolls of masking tape—essential for any tinkerer worth his or her salt—were rendered completely ineffective, their adhesive no match for the relentless heat.

The intrepid Exploratorium team overcame these and other obstacles to bring the joy of crafting Circuit Boards, Scribbling Machines, Wind Tubes, and Marble Machines to facilitators and visitors alike. The Exploratorium’s master makers have since returned to San Francisco, but the Tinkering Studio has remained in Saudi Arabia, where it will travel around the kingdom until mid-January of 2013.

This project has been a huge success and also presented unique challenges. According to Luigi Anzivino, Scientific Content Developer, before the festival “we had selected materials, built an environment, coached facilitators, immersed ourselves in the culture, and felt ready. But we were not prepared for the sheer magnitude of the crowds, and the challenges that come with facilitating in a very different culture...and without the ability to speak the language.”

Before arriving in Saudi Arabia, the Exploratorium team also wondered if and how the concept of tinkering would translate on the other side of the world. How would it be received? Is tinkering truly universal? What the team learned is that tinkering—hands-on making—is not culture...tinkering—hands-on making—is not culture specific, but rather seems to be an essential part of the human condition.

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Tinkering, like informal science education in general, is a process that involves critical thinking skills, collaboration, inquiry, experimentation, and learning through error and iteration. In a country like Saudi Arabia, the team had to be especially open, proactive, and humble in promoting these Exploratorium-centric values. In this very different culture, there was much to negotiate beyond the extreme desert heat. Female Exploratorium staff wore floor-length black abayas, but the team also worked hard to ensure that the Tinkering Studio was simultaneously available to both genders for the duration of the festival.

“Two days before the festival the Saudi educators were saying, ‘we don’t think this is going to work,’” says Karen Wilkinson, Tinkering Studio Director. “But by the end of the festival, people’s attitudes completely changed—it was completely transformational for everyone involved. Watching the educators and the visitors take ownership of this approach to teaching and learning was just amazing to see.”

While it might seem surprising that Saudi Arabia is embracing informal science education, the region in general is currently exploring this kind of initiative. “Saudi Arabia—like other Middle Eastern countries we’re working with whose economies have been based primarily on oil—is looking to transition, recognizing that you cannot have an oil-based economy forever,” says Adam. “They want to switch to information- and technology-based economies, and the pathway to information and technology economies is education, specifically science education. The Exploratorium is a great resource for those pathways.”

LOOKING TO THE FUTURE
In January of 2013, the Tinkering Studio is scheduled to finish its tour of Saudi Arabia. This project combines with Exploratorium Global Studios’ work in Turkey, Egypt, and the United Arab Emirates to produce a significant and growing impact on informal science education in the Middle East.

Closer to home, Exploratorium Global Studios is working with TMG Partners and the City of Emeryville to install outdoor experiences at the Emeryville Public Market this fall. In Arkansas, the Exploratorium is working to build tinkering spaces in partner museums, as well as formulating a large-scale festival devoted to hands-on making. “The Exploratorium offers an intensely democratic approach to learning,” says Karen. “Whether you’re in rural Arkansas or oil-rich Saudi Arabia, you can connect with the power of inquiry and personal discovery.”

As the Exploratorium prepares for its move to the San Francisco waterfront in 2013, it plans to continue to expand its global reach. The possibilities—and the potential benefits—of the Global Studios’ work and its partnerships are endless. “The more we get out there, the more we learn and the richer we are as a culture for it,” says Adam. “These collaborations are going to be a big part of our creative lifeblood going forward.”

Ultimately, the efforts of Exploratorium Global Studios reflect the fact that there is simply too much passion, expertise, and enthusiasm for science and inquiry to be contained within the museum’s four walls. After all, as Sam says, “The Exploratorium is not just a place, it’s a movement that’s active around the world. We have a footprint that impacts people in so many places and so many different ways—it’s more than amazing. It’s amazing squared. It’s amazing cubed.”

Left: At the festival, translating information about the Tinkering Studio was tricky since the word “tinkering” doesn’t really exist in Arabic. Right: The first day of Saudi Aramco’s five-week-long science festival drew huge crowds and had an electric, almost chaotic energy.