

Re-engineering the IMAX Dome Theater

# the tech. reinvented.

The Tech has embarked on its most ambitious undertaking since the facility opened its doors in 1998. In 2012 The Tech launched a five-year institutional transformation, The Tech 3.0 Campaign, to redefine the museum as a Silicon Valley resource for innovation. One priority project with unmatched potential to increase community engagement and impact is the conversion of the IMAX Dome Theater to digital use.

# what is the IMAX dome theater conversion project?

The Tech’s IMAX Dome Theater is at a critical crossroads: The oversized, miles-long reels of IMAX film are being phased out and IMAX films are going digital; the theater must do the same. But this is much more than a technical decision. The right digital solution will make the giant-screen theater a centerpiece in The Tech’s new identity in the community. This conversion project will do away with the outdated dome projector and screen, replacing them with the most technologically advanced laser-based digital theater system and the largest 3D flat screen in Silicon Valley. A digital theater will broaden The Tech’s list of movie options from a limited selection of dome-compatible films to the best educational and Hollywood movies available. The project also will remake the theater space into a powerful community asset with a new stage, broadcasting equipment, and audiovisual upgrades. The theater will become far more than a place to see a movie. It will be a coveted venue for live entertainment, corporate product launches, gaming tournaments, and other technology-enabled interactive forums.

# history of the dome theater

At The Tech’s IMAX Dome Theater, expressions of awe and wonder are unmistakable on the faces of schoolchildren and adults who are visually transported to places they have never been, having adventures they never imagined possible. Since 1998 more than three million people have experienced the theater, and The Tech has featured about 35 educational films, each aligning with an average of 19 California science standards across grades K-12. While at The Tech, hundreds of thousands of students have embarked on the greatest expedition in history with “Lewis & Clark: Great Journey West,” been engulfed by a tornado via “Forces of Nature,” and inspected a snail’s tongue in “Mysteries of the Unseen World.” The dome theater has allowed visitors to peer into worlds they otherwise wouldn’t see.

The dome theater is a central part of The Tech’s identity, as its shape defines the museum’s iconic façade. When it opened in 1998, it was the most technologically sophisticated dome theater in the West. But 15 years of high-tech advancements have accelerated all film-based domes’ path to obsolescence. In recent years, the theater has underperformed, primarily because of obstacles digital theaters don’t have. These include the high cost of film purchases ($20,000 per copy), limited film selection due to lack of storage space for giant reels, sky-high shipping costs, limited accessibility to box office movies, the high cost of replacement bulbs for the light source, and other crippling expenses. Topping this list of obstacles is the simple fact that film prints are going away. Theaters of all types have been transitioning from film to digital, with the majority of commercial cinemas fully converted. Museums that plan to continue operating their giant-screen theaters are all expected to convert to digital within the next three to five years. For The Tech, the time for change is now.

# the theater today

Currently, the IMAX Dome Theater has one purpose: to show films. Each year about 160,000 visitors come to The Tech for an IMAX educational film or box office feature. Attendance has been trending down, declining every year from 2007-2008 (251,402) to 2013-2014 (159,117). IMAX films remain popular for school field trips, but student attendance also has been trending down since 2010-2011 (84,929). In the last school year, 73,304 students experienced an IMAX film during a school visit. Sixty-five percent (47,713 children) were from low-income Title 1 schools.

These declining numbers belie the fact that every day young people still light up when they walk into the theater and see the giant screen, hear the immersive sound, and are surrounded by the four-story images of space, seas, and land. The majority of thank-you letters The Tech receives from students feature raves about their IMAX experiences. The Tech keeps a library of 14 educational films, available by teacher request. Each film aligns with state education standards for science and has educator resources to incorporate the experience into class curricula. Many teachers have fully integrated an educational IMAX experience into their lesson plans and bring their students to The Tech year after year to enhance their learning and retention.

The museum’s general visitors also consistently give high marks to their IMAX experiences. About 40% see an IMAX film during their visit. In a spring 2014 survey of museum guests, 60% of respondents who saw an IMAX film rated their overall satisfaction as excellent, compared with 52% of those who did not. Most also ranked the screen size as the theater’s top-driving feature (76%). When it comes to movie screens, size does matter.

# the transformation

The Tech seeks to transform its theater into a powerful community asset for the best possible educational movie experiences and much more. The Tech consulted with Blaze Digital Cinema Works on technology options and developed detailed cost analyses. Blaze is known for advising science centers on converting from film to digital, with clients including the Carnegie Science Center, Memphis Pink Palace Museum, COSI Columbus, Milwaukee Public Museum, City of Spokane, Orlando Science Center, and TELUS World of Science ­– Edmonton.

For this project, Blaze helped The Tech: 1) evaluate the entertainment industry’s top laser digital systems; 2) analyze dome vs. flat screen and IMAX vs. non-IMAX options; 3) evaluate recent conversions at comparable museum theaters; and 4) conceptualize The Tech as a purveyor of alternative content.

Based on Blaze’s in-depth, 61-page Digital Cinema Planning Report, completed in August 2014, The Tech is eager to pursue the following:

1. A wall-to-wall, floor-to-ceiling, 70-by-52-foot flat screen, the largest in Silicon Valley. Why?

* 3D capability.
* Broader film selection, as most Hollywood films require a flat screen. An expanded Hollywood film strategy will maximize net revenue and sustainability.
* Alternative content, since multimedia programming outside of educational films requires a flat screen.
* A 70-foot screen is wide enough to deliver an immersive experience.
* This screen will cost substantially less than a new dome screen.
* It will be the biggest high-definition flat screen in Silicon Valley.

1. IMAX GT Digital System 6p laser, 4K projectors, 3D (1,90:1, 4:3 aspect ratio). Why?

* The IMAX brand and quality remain unmatched in the industry, while cost is on par with its competitors.
* The format provides true 4K resolution, with improved brightness and color.
* The IMAX Film Distribution agent streamlines booking for Hollywood films and eliminates the need to contract with a professional film buyer.
* 3D capability will make educational films even more engaging for students. Imagine watching “Flight of the Butterflies” or “Hubble” in 3D.
* The digital system enables us to show alternative content, including video gaming, animated short-form content for younger children, live sporting events, local film festivals, and indie films.
* The Tech will be one of the first institutions in the world to receive IMAX’s digital two-projector 6p laser system, making it the most technologically advanced digital theater in Northern California.

1. New stage and broadcast equipment to host, produce, and distribute alternative content. Why?

* Increase The Tech’s relevance and capacity as a community resource.
* Engage the art-tech, music-tech and ed-tech communities to showcase their work in the region’s most cutting-edge theater.
* Support The Tech’s Creative Collisions initiative to foster local innovation.
* Allow The Tech and Silicon Valley to create and broadcast more original content, increasing our reach.

1. Physical upgrades to transform to a state-of-the-art flat-screen theater. How?

* Remove and dispose of existing dome screen.
* Remove IMAX projection booth and renovate the space into a large concession area.
* Remove current projector “doghouse” in auditorium’s center.
* Install ceiling and walls for proper acoustics.
* Create upper projection booth for new digital system.
* Overall architectural, engineering, construction, lighting, wiring, acoustic, and design improvements.

# timeline

Architectural design work will start as soon as funding is secured, followed by permitting and construction. A general timeline of events:

* Secure funding, summer 2015
* Sign letter of intent with IMAX, summer 2015
* Architectural designs, revisions, construction timeline, summer to fall 2015
* Theater closes and construction begins, fall 2015
* New IMAX digital system installation, winter 2016
* Grand opening, spring 2016

# what success looks like

Here’s a peek at the future:

The Tech’s new digital theater never stops bustling. Waiting for today’s 1 p.m. 3D showing of “Flight of the Butterflies” are five different school groups, all lined up to pack the house. Most of the students already have their cellphones in hand to participate in the interactive preview, a gaming activity on citizen science. They can get extra credit if they upload their results to my.thetech.org and share the link with their teachers.

At 2:30 the Global Mobile Game Developers Conference is holding a session in the new theater. The Tech has been partnering with the San Jose Convention Center whenever conference participants need a grand auditorium and stage area that can live-stream speakers or activities. Today’s collaboration will feature an interactive session in which attendees will co-develop a new energy conservation game by tossing their best ideas and strings of code onto the giant screen from their mobile devices. A moderator will compile the program in real time and a new mobile game will be created at record speed, then uploaded to Google Play for download. The session will be capped by a live-streamed talk by Xbox Chief Don Mattrick, who will be answering questions about Xbox’s virtual reality console. The audience will watch on the big screen as notorious gamer Tom Syndicate plays remotely from his living room couch in the U.K.

By 4 p.m., a long line is snaking around the building. The Tech’s spectacular laser projection system and giant screen have garnered a reputation as the premier place to see a movie in San Jose, especially in 3D. Midnight is the opening of “Star Wars VIII,” and there’s no better place to see it than in this technologically advanced theater, with dual laser-illuminated projection and the largest screen in Silicon Valley. Tickets for the whole weekend sold out within two hours of availability on The Tech’s Smart Museum–integrated ticketing system.

A look at The Tech’s online calendar of events shows that the theater will be packed day and night for the next two months. Tomorrow’s ed-tech-themed Creative Collisions event, held throughout the museum, will include an unforgettable component in the theater: Mark Zuckerberg will make a rare appearance to talk about coding as a high school graduation requirement in California.

# potential risks – and overcoming them

The Tech’s decision to be an early adopter of the giant-screen 6p 4K 3D laser system will come with risks. The Tech won’t be the first, however, to take this plunge. The biggest kinks should be worked out when the first system goes live in Toronto this November. Until we see that system, and even after, we are making a leap of faith — based on IMAX’s record of excellence — that its laser-based system is indeed superior to all others. The Tech will request discount pricing as consideration for its early investment in this new technology and will not sign a long-term system license before inspecting a full-production model of the system.

A second risk is the lengthy downtime for theater construction during the 2015 holiday season, The Tech’s busiest period. Not only will construction mean lost revenue from movie ticket sales and concessions, but it could affect the overall museum experience when select exhibits near the theater close to ensure safety. The Tech already is consulting with Steinberg Architects, which built the original theater, on ways to accelerate construction and reduce costs. The Tech will work hard to minimize disruption and invest in an aggressive marketing campaign to bring customers back when the theater reopens. Additionally, we anticipate the revamped theater and concession area to increase revenue and recover income lost during construction.

A third potential risk is public resistance to the loss of the signature dome screen. This is one reason The Tech must install the largest flat-screen possible: We want moviegoers to still enjoy an immersive experience. 3D capability will also help visitors transition. And once The Tech’s patrons experience the versatility of a giant flat screen through other events inside the theater, the dome screen will become a distant memory.

# the project budget

The estimated project budget is $5.89 million:

* New IMAX GT Digital System 6p laser, 4K projectors, 3D, and screen: $1,785,625
* Architectural changes and construction: $2,487,100
* Exterior electronic signage: $400,000
* Marketing campaign: $200,000
* Estimated lost revenues: $350,000
* Personnel: $219,153
* Indirect/overhead (10%): $449,188

# the operating budget – from red to black

The Tech’s original dome theater was one of the institution’s greatest assets when the science center opened in 1998. Over the years this leading attraction has grown into a liability as the theater generated a $122,892 loss in FY 2014. It is projected to generate a $188,468 loss in FY 2015. Annual budget projections for the digital theater after its complete transformation show a $38,982 operating profit in Year 1 and a steady increase in revenue growth year over year. These projections don’t include additional revenue surges expected from theater rentals for events, which are currently nonexistent due to the dome screen and lack of a stage.

# your support

A sizable investment in this project will be an investment in the long-term health of The Tech. Instead of chasing after limited movie options on film, The Tech will be wading through abundant new movie selections. Instead of having a single-purpose theater, The Tech will have a mixed-use, state-of-the-art multimedia facility. Instead of operating at a significant loss, The Tech theater will be operating at a profit. A new interactive, digital, giant-screen theater will amplify The Tech’s capacity to pursue its mission: to inspire the innovator in everyone.

# recognition

The dome will be renamed in recognition of the presenting sponsor’s support. Your family or organization’s name will be incorporated into the title of the center, such as: The SPONSOR’S NAME Giant Theater or The SPONSOR’S NAME IMAX Theater. Every official reference to this theater will have the sponsor’s name, much like a football or baseball stadium. That includes ticketing websites like Fandango and Movietickets.com, media mentions, and calendar listings. Each individual printed movie ticket also will bear the sponsor’s name.

Other recognition includes:

• Name on signage inside and outside the museum (400,000-500,000 visitors annually plus millions of passers-by).

• Name on marketing materials promoting events in the new theater.

• Recognition and opportunity to speak at press event for the theater’s opening.

# in gratitude

We value your consideration of partnership to support this project at The Tech for the Silicon Valley community, and we look forward to many years of continued collaboration. Thank you for your consideration of this philanthropic investment.

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