Final Report to the Institute of Museum and Library Services
August 29, 2013

—INTRODUCTION—

In 2011, EMP Museum received a Sparks! Ignition Grant from the Institute of Museum and Library Services to finalize development and installation of a multi-user, gesture-detecting interactive designed to invite audiences to "curate" their own participation at the museum, turning would-be passive onlookers into active participants.

The prototype for our "Top 10"* project was first fueled by a Wallace Foundation Excellence Award, supporting research and innovation of tech-mediated strategies to better engage EMP's teen audiences. Received in 2008, our multi-year Wallace Foundation Excellence Award facilitates ongoing studies aimed at improving the quality of in-museum experience for younger visitors.

**The name "Top 10" – our working title for this interactive – has since been refined through a charrette process in collaboration with the museum's Youth Advisory Board (YAB), Audience Development staff, and Visitor Service Representatives. The installation is now publicly known as "On the Wall" to all EMP audiences onsite and online.*

ADMINISTRATIVE

Institution: EMP Museum
Project Title: Top 10 Interactive (onsite installation name: On the Wall)
Award Amount: $25,000
Total Project Cost: Project Budget = $127,946 (Total costs to date = $126,956)
Start & End Dates: *Extension and key personnel change approved 06/18/2012*

- Original award dates from 06/01/2011 to 05/31/2012
- Modified award dates from 06/01/2011 to 05/31/2013

Project Director Name: Patty Isacson Sabee, Acting CEO & Deputy Director
Formal Project Partner: The interactive installed at the museum is powered by 7digital — an API (Application Programming Interface) in a partnership that provides access to and integration with a digital music catalogue and technological platform which is essential to its functionality.

> ***"EMP is one of the most innovative museums in the country for music lovers and is based in Seattle, a city which is rich in musical history. Music is very emotional and certain songs create memories and feelings that are triggered whenever we hear them… Visitors can interact and view album art from current and catalog artists [in] a truly unique experience."***
>
> —Vickie Nauman, President of 7digital North America

PROJECT SUMMARY

Need Addressed: Teenagers and adolescents are surrounded by popular music in their everyday lives, but are seldom given an educational platform to listen critically and make informed judgments about what they hear, or to engage in dialogue about the context of a song or artist within American history and culture. At the same time, the pervasive use of digital communications has been integrated into teens' everyday social interactions and is frequently their foremost mode of individual expression. Despite the fact that an exponentially rising 64% of teens (ages 12-17) habitually engage in at least one type of digital or online content creation, museums have conducted few cultural literacy and digital media-driven programs for this age group.

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"On the Wall'" complements EMP's content by letting us engage with the public in a unique, real time way. Popular music trends are constantly changing and 'On the Wall' allows us to represent what is current and most relevant to our visitors." —Jasen Emmons, Director of Curatorial Affairs

Aligned with our organization's mission-based premise as a "gateway museum" that reaches multi-generational audiences through "collections, exhibitions, and educational programs, using interactive technologies to engage and empower our visitors" and a successfully tested prototype, EMP sought to finalize implementation of "Top 10"—a gesture-detecting, multi-user interactive that encourages visitors to nominate and vote for their favorite songs in an activity for audiences of all ages, particularly youth 10-19: a demographic estimated to make up 24% of museum visitation, whose participatory needs are rapidly evolving in response to new and emerging media.

Visitor Experience Framework: Top Ten's initial concept envisioned…

- Multi-User, collaborative experience with an option to "play alone"
- Layers of engagement provide the visitor with a choice of a lighter or deeper touch
- Level of participation equals level of reward — encouraging users to "go deeper"
- User generated content contextualized by authoritative lists drafted by industry professionals, experts or prominent figures
- Participation/user generated content has an influence on the space within the museum (e.g. programming)
- Real-time interpersonal interaction will positively influence the exhibition space — creating a contagious energy with visitor "intermingling" and "crowding" as users engage with others
- Participation will lead to an enriched museum experience, connecting visitors to exhibition content

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Project Activities: *In support of our final design, fabrication, and full-scale deployment objectives for "Top 10," EMP achieved the following benchmarks:*

- Submitted RFPs to outsource the software development and interactive design work required to facilitate the launch of Top 10; Hired interactive design firm (Ken Experience Architects) to spearhead Top 10's user experience architecture, visual design, and technical implementation. **[Feb/May 2011]**
- Engaged an interpretive cultural exhibition consultant, Victoria Prizzia of Habiteque Inc. (recommended by Top 10's prototype designer, Nina Simon) to provide teen audience engagement expertise and guidance in planning a Top 10 user experience that fulfills its experiential and programmatic objectives – collaboratively revised and refined with museum education, marketing, and technology project leads. **[Sept-Oct 2011]**
- DESIGN MILESTONES: Preliminary UX Review; Design Consultant Working Sessions; Presentation of YAB Audience Research and Recommendations; Onsite Working Session with Consultant; Interim and Final UX Review and Approval by Project Team; Preliminary and Interim Visual Design Review Sessions; Preliminary Build Review Test; Report on Youth Advisory Board's Evaluation Session with Consultant; Interim Beta Build Review Testing; Development Complete; Beta Version Release Testing Completed. **[Feb-Jun 2012]**
- Onsite Installation of On the Wall interactive at EMP Museum **[Oct 2012-Feb 2013]**

Evaluative Sessions –

- Twelve members of EMP's Youth Advisory Board ("YAB," ages 15-18) gathered for a prototype review of Top 10. The primary goals of this front-end evaluation process were to test the initial user interface approach as well as the overall conceptual approach to the Top 10 component. **[February 16, 2012]**
- Eight members of EMP's Youth Advisory Board gathered for a brief evaluation session led by our interpretive exhibit consultant, Victoria Prizzia, to provide feedback regarding the evolution of "Top 10." **[April 5, 2012]**

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—2012 Prototype Testing—
EMP Youth Advisory Board

EMP's Youth Advisory Board (YAB) members create and moderate content on The Soundboard, an online social network devoted to the Northwest's all-ages music scene; engage in leadership training; work together with local musicians, artists, and community groups; and develop and promote teen programs at the museum such as Sound Off!

The primary goal of this process was to compile content related feedback from YAB members before starting its final design phase. Specifically, we wanted to gain a formative understanding of the types of playlist categories the YAB group would be interested in, what songs they would include within these playlists and what they would want to do with their playlists before walking away from the Top 10 component.

We also tested the interactive's working title "Top 10" (and alternate naming conventions/terms) with the YAB group to better understand any positive or negative connotations associated with the phrase, offering YAB members an opportunity to suggest other ideas to re-name the interactive themselves.

Finally, we wanted to compile specific feedback from the YAB group regarding their favorite aspects of EMP Museum to gain inspiration for new ways to tie the interactive back to our collection and exhibitions. In addition to the YAB test session, consulting designers also had the opportunity to explore and assess possible locations for the TOP 10 component within the EMP Museum footprint and to meet with EMP staff to discuss potential use of TMS (EMP's database), regarding curated content for the project.

Key Findings that Informed Revisions –

1. The words "Top 10" generate negative connotations. *Eight out of twelve participants in the survey directly described strong negative associations with the words "Top 10"— ranging from sad face symbols to words such as "vapid music" and "artists I don't like." There was a strong reaction to the commercialization of the music industry with disparaging references to Top 40 radio, award shows and Billboard lists. There appeared to be less interest in popular music and more excitement around exploring all musical genres and discovering or "remembering" lesser known music and musicians.*
2. The ability to personalize and self-direct the experience is at the root of a majority of the YAB's feedback
3. There is a strong desire to find and share music with others, particularly in the form of personalized playlists that can be created by the user.
4. The social aspect of Top 10 is a valuable aspect of the user experience

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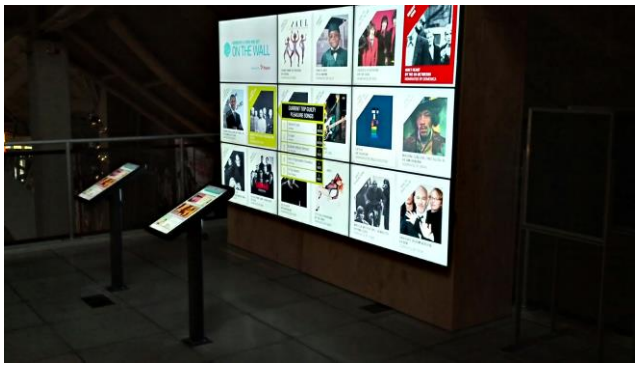
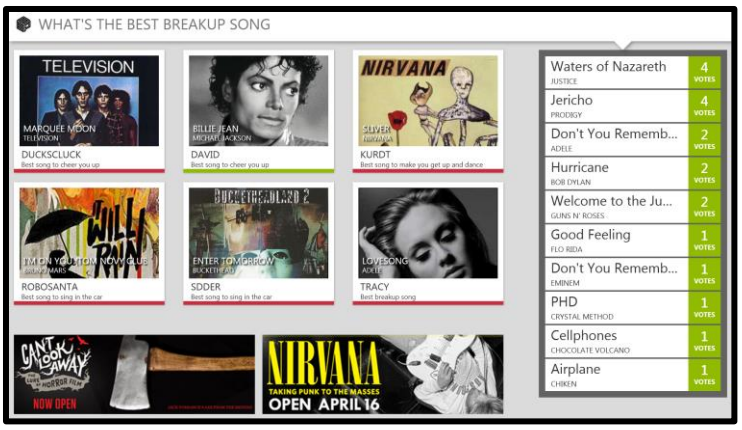
5. Facebook connectivity and an online version of Top 10 both appear to have the potential to extend the user experience of Top 10 with this demographic (15 to 18 year olds)
6. A dwell time between three to seven minutes appears to fall within a realistic range for this demographic
7. Playlist categories can provide opportunities for direct links back to EMP's collection and other visitor experiences
8. The location of the TOP 10 interactive within the Footprint of the EMP will impact the overall visitor experience of the activity
9. YAB members were more attracted to UI comps that featured imagery as opposed to text: *"Although the YAB group was not asked specific questions about the current design comps for the TOP 10 User Interface, they were exposed to the working drafts. Their feedback consisted of an initial preference for a UI that resembles an iPod, iPad, or iPhone interface. In general, the YAB group consistently refers to EMP as being edgy and original and they admire those qualities in the museum."*

—Onsite User Experience—

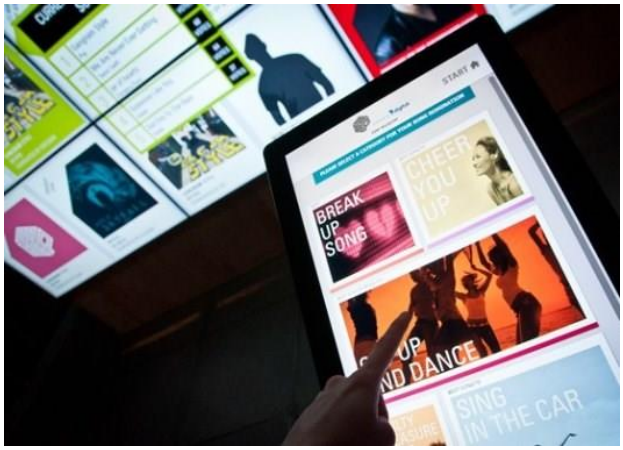
The first thing people see as they approach the interactive is an impressive 8' x 10' video wall. This large-scale video wall hosts a collage of audience-picked songs in distinct custom categories.



Visitors are invited to step up to one of two voting stations (kiosks), type in their selection, and see how it ranks on the big screen.



The wall provides two pieces of information: 1) the most recently nominated songs for any category, and 2) the ranking of the top nominated songs for each category. Every few seconds, the "top 10" list on the right will switch to a different category.



Visitors see their nomination "On the Wall" by stepping up to one of the two kiosks located in front of the interactive.

The visitor starts the experience by selecting a category that they'd like to nominate a song for. (Here, the visitor taps the tile for Best Song to "Get Up and Dance.") Then, visitors can browse through previously nominated songs, either by song name, album, artist or genre. If they wish, they can enter the name of the song/album. Next, visitors are prompted with options to choose: listen to a 30 second music clip, keep searching, or nominate the current song.

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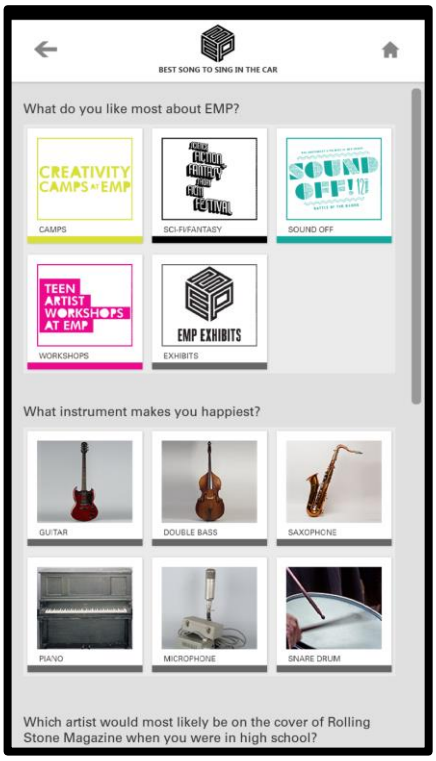
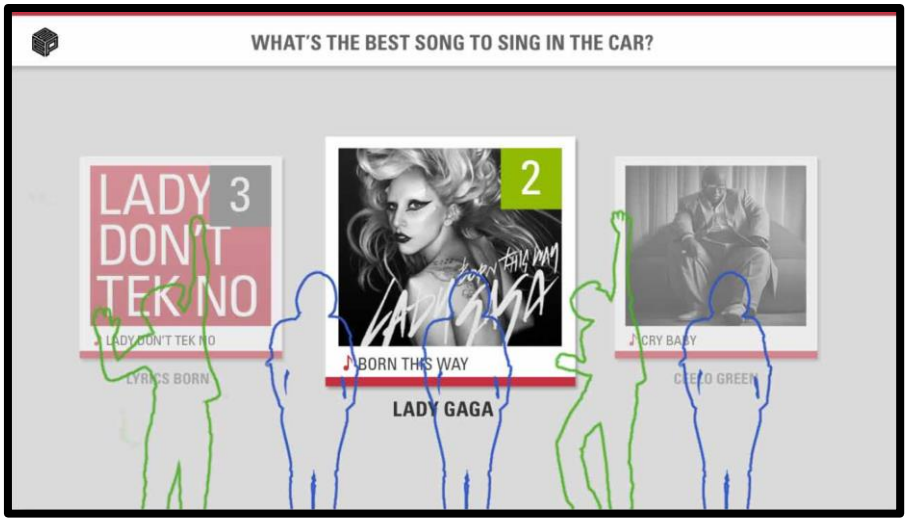
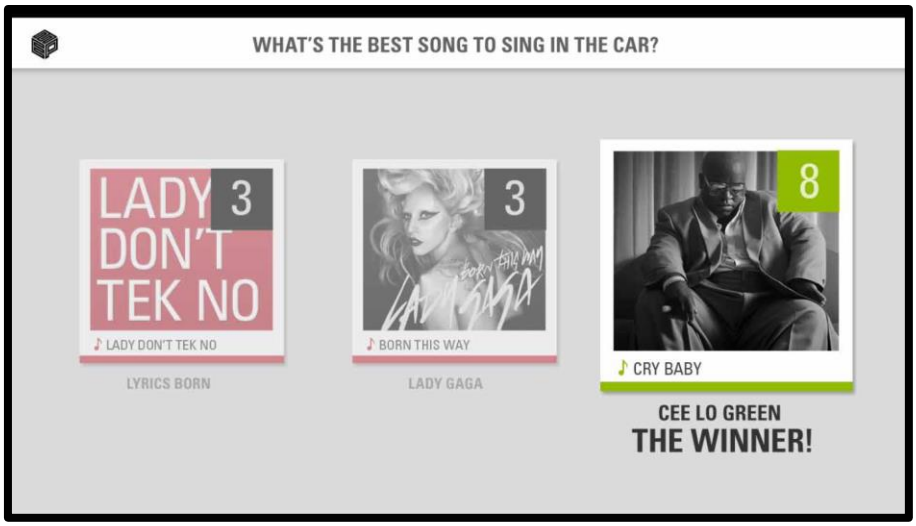
Once the visitor submits their nomination their attention is directed to the video wall, where they can see their nomination is now "On the Wall."

At this point, the visitor is presented with specially-designed demographic questions, e.g. to determine the user's age and interests regarding EMP public programs.





Periodically, three songs nominated for a category will put to a head to head vote for any visitors standing in the area. Kinect* cameras are used to sense the outlines of anyone standing nearby and those outlines will appear on the video wall. To register a vote, visitors raise their hand and their outline turns green to indicate their vote was counted. Clips of the songs are played during the voting period.



At the end of the voting period, the highest "vote-getter" is declared the winner, and those who voted for it can celebrate.

The video wall then returns to its original state, beginning anew.

EMP is currently beta testing the Kinect-powered voting activity element. **[Aug 2013]**

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Facilitated User Evaluations

Forty-seven individuals were randomly selected to be interviewed (25 males and 21 females) regarding their impressions of, and experiences with, On the Wall at the EMP. 37 % of those surveyed were between the ages of 18 to 24 followed by 21.7% under 18, with an equal 21.7% between 25-32, an additional 13% between 33 to 45, and 6.5% over age 46. **[November 15-16, 2012]**

Primary Takeaways –

- A majority (55.6%) of those surveyed were "naturals" at using the kiosk. 86% of those interviewed found On the Wall (OTW) "very" easy/intuitive to use. 38.1% of individuals gave OTW a rating of 8 out of 10 (with 10 being the highest). 31% of users gave OTW an overall rating of 7. People generally like the component.
- The categories, selection of music, the sharing of opinions and seeing what songs others selected were mentioned as highlights of the OTW experience. We also heard a desire to have more immediate feedback once a song is nominated.
- On the Wall seems successful as both an individual experience as well as an experience for more than one.
- Individuals were observed sharing a single headphone set to listen to clips together and some specifically requested the addition of more than one set at each kiosk. People did gather and browsed through songs together.
- The video wall is an attractive element and people enjoy the visuals and seeing their selection immediately appear on the wall. "I like how the video wall changed. It caught my eye," and "Visually it is very attractive. The artwork is brilliant. The pop-ups keep you interested."
- Dwell time was impressive overall with 60.5% engaging with the component for 3 to 7 minutes. However, although 23.3% spent less than three minutes interacting with OTW, many "naturals" or "experimenters" completed all of the steps within this time.
- Song nomination was wildly successful with 90.9% of individuals participating in this step (24.2% nominated more than one song). Individuals also seemed to thoroughly enjoy listening to the clips even if they did not submit a song.
- 67.4% expressed an interest in an online version of OTW. Somewhat surprisingly, only 48.8% would be interested in sharing their nomination with social networks. However, many individuals were observed taking photos of the video wall with their mobile devices.
- People in general wanted more interactivity—from touching the video wall to activating the floor to have a dance party to go along with their nominations. A Kano analysis was performed to identify how people perceived the presence of a group-voting feature. 80% of people responded favorably to this feature, with the clear modal response indicating that this would be an attractive feature to have but they wouldn't be dissatisfied with the interactive if it were not implemented.
- Additional analysis was considered to determine if results were dependent on age group, engagement level, gender, and rating but chance could not be ruled out as a factor explaining the differences. Some additional targeted testing and or focus group studies would be required to draw more definitive conclusions.

<u>Significance</u>: *In addition to previous audience testing and analysis, an informal survey conducted recently by an EMP Museum Visitor Services Representative drew the following conclusions about the effectiveness of our "On the Wall" interactive.*

- The majority of visitors spent approximately five minutes using the interactive. Roughly half of all museum guests who walked past the installation actually used it – mostly owing to the limited number of stations available (2 kiosks) as most people did not want to wait in line. When asked what they thought about the

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exhibit, the most popular response was, "pretty cool." Several guests commended the exhibit's musical variety, saying that there was no song that they could think of that could not be found in the database.

- There were a few minor technical aspects of the exhibit where visitors saw room for improvement – mainly pertaining to functionality, e.g. more kiosks, an alphabetical list of artists, more themes and categories to choose from, longer song clips/samples, and a search bar for 'songs' once the artist has been selected.
- One guest said that the exhibit left him, "lamenting popular music" and was depressed by what his fellow EMP patrons chose as their favorite songs and artists. This EMP visitor continued by saying that he really appreciated our current *Nirvana: Taking Punk to the Masses* gallery and all of the artists that it represented.

Based on the above evaluative feedback and user interactions, we have learned that "On the Wall" is exceeding expectations where dwell time is concerned. For an activity like OTW, three minutes is our benchmark for ideal user experience. (Generally, everything EMP designs attempts to deliver a satisfying experience within a 3-5 min range because of competing demands for thru-put.)

Most importantly, "On the Wall" is successfully engaging our target demographic: young people.

PROCESS

The main cause of divergence from Top 10's originally scoped timeline was the untimely loss of EMP Museum's highly esteemed Education Director, Dr. Patricia Costa Kim – who began her tenure with EMP in July of 2010 and passed away in May of 2012. While her vision of Top 10's "raison d'être" has guided its development, even in her absence, the process of moving design forward had slowed considerably. In many ways our grant award enabled the institution to maintain a focus on youth participation initiatives that might have been lost otherwise.

While the prototype version of Top 10 was comparatively low-tech, its finalized video wall-enhanced design has maintained the accessible and tactile nature of its original version. One source of consternation on the technical side has been integrating a multi-user voting experience using Kinect sensors in the onsite space. This feature is now undergoing final commissioning to overcome those obstacles and we expect full functionality is imminent.

In conjunction with our Wallace Excellence Award-supported teen participation strategies, we also investigating ways to integrate a Web-based experiential component of On the Wall with The Soundboard, our YAB-mediated online social network, launched by EMP to enrich the museums' music/arts programming for youth. This aspect of the project, while less robust than originally scoped, was determined the best place for its intended audience.

It has been exciting to see this project come to fruition from a simple paper prototype idea (over two years ago) to a compelling, dynamic experience for our visitors. Input contributed by our Youth Advisory Board was vital to the design process, serving to mold "Top 10" into *On the Wall*, cultivating the museum's teen audience as active contributors to, rather than merely passive consumers of popular culture. On the Wall's interactivity achieves an essential step toward EMP Museum's mission-aligned goal of delivering innovative programs that leverage new media and technology in order to enrich visitors' understanding of art and culture.

RESULTS

The onsite-deployed installation opened to visitors on October 31, 2012. One of our primary project goals for developing the "Top 10" (On the Wall) interactive was to gather demographic data that can be used to enhance future exhibit and program development. Over the last six months, more than 25,000 people have nominated a song on the interactive with 30% of them providing demographic data.

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Information gathered through *On the Wall* user surveys:

1) Gauging awareness and affinity with public programs
2) Estimating users' age range
3) Collecting zip code/geographic (region, state, county)
4) Cultural interests (e.g. favorite musical instrument)

Which artist would most likely be on the cover of *Rolling Stone* Magazine when you were in high school?

LIKELY AGE	Count	%
Teens	2450	31%
Twenties	1938	25%
Thirties	1307	17%
Forties	972	12%
Fifties	724	9%
Sixties	396	5%
Seventies	123	2%

30% of users answered age question

What do you like most about EMP?

PROGRAM	Count	%
Exhibits	4206	62%
SFFSFF	1180	18%
Sound Off	633	9%
Teen Artist Workshops	423	6%
Creativity Camps	296	4%

26% answered programs question

What instrument makes you happiest?

INSTRUMENT	Count	%
Guitar	2888	35%
Piano	2011	24%
Microphone	1052	13%
Snare Drum	832	10%
Saxophone	846	10%
Double Bass	623	8%

32% answered instrument question

Where are you from?

REGION	Count	%
USA	5689	71%
Canada	749	9%
Europe	644	8%
Asia	325	4%
Australia	232	3%
South America	128	2%
Africa	107	1%
Mexico	83	1%

30% answered region question

OTW's adaptable content (functionality is not limited to music as subject matter) and collaborative format make it a highly applicable to analogous institutions in the areas of popular culture, museums of art and history – as well as zoos and botanical gardens – that seek to deepen audience engagement and diversify visitorship through

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tech- and social media- driven activities. In addition, such an installation can be leveraged by its host venue to enrich audience profiles through "light touch" user surveys, gathering demographic and other characteristic information about *On the Wall* participants. For example, modifiable questions aimed at determining visitors' preferences and interest levels can then inform planning of future exhibits and programs.

EMP Museum is evaluating how best to utilize this valuable user-audience data to influence development of our youth-oriented (and all-ages) public programming and outreach.

RESOURCES

1. Youth Advisory Board → empmuseum.org/programs-plus-education/programs/youth-advisory-board-(yab)

2. On the Wall interactive → empmuseum.org/at-the-museum/museum-features/on-the-wall

3. The Soundboard → facebook.com/TheSoundboard

4. A 2004 RAND Corporation Study, *Gifts of the Muse: Reframing the Debate about the Benefits of the Arts* found positive initial exposure to arts organizations during adolescence to be a key determining factor in participants' future inclinations toward arts engagement as an adult.

5. Nina Simon. "The Participatory Museum" Museum 2.0 (March 2, 2010)

6. Amanda Lenhardt, "Teens and Social Media," Pew Internet & American Life Project (2007)

7. "Today's teens seem constantly plugged in to video games, social networks sites, and text messaging. Yet there is little actual research that investigates the intricate dynamics of youth's social and recreational use of digital media."
—*Hanging Out, Messing Around, and Geeking Out: Living and Learning with New Media*. Cambridge, MA: MIT Press (2009)

8. EMP Museum's imperative to create teen-led, tech-enhanced engagement opportunities was the impetus behind independently conducted focus groups in 2009-2010, performed by research consultants Martin & Stowe, which revealed two key perception barriers conveyed by the museum's teenage constituency –

a) The facility's physical environment was viewed as prohibitive and unwelcoming to the casual teen visitor;
b) Teens did not find any compelling reason for repeat visitation or ongoing engagement with the museum after experiencing its exhibitions one time.

"The resulting teen audience analysis informed our subsequent prototype design and in-museum testing of four, relatively "low-tech" interactive devices in August 2010. Subsequent review and assessment by EMP's Education Director and a consulting participatory museum specialist (Nina Simon) were conclusive in their recommendation: that the 'Top 10' model had demonstrated the strongest candidacy for motivating teen visitors to seek out, create and share museum content via traditional and tech-mediated interactions. Top 10 was proven effective in engaging a broad audience on various levels, supporting both creative and critical participation, social engagement and dialogue."

Photos included in this report provided courtesy of EMP Museum staff.

EMP Museum is designated as a 501(c)(3) organization as Experience Learning Community (formerly d/b/a Experience Music Project).