

## ***Exhibit Commons: Using the Internet for a New Exhibit Paradigm***

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### **Abstract**

In the museum world, the age-old model of “one-way” experience creation has remained largely unchallenged. Historically, museum staff and consultants have most often been the ones to conceive of exhibition topics, interpret the content and design the experiences that the public encounters. But today, a major shift in building exhibitions is under way – a shift that will profoundly influence not only the way institutions operate but also their reach and ultimate impact.

This paradigm shift exists on the Internet, and it is in cyberspace that a new wave of “museum makeovers” will come to the fore. Today the connectivity and ubiquity of the Internet is a fact. According to the Pew Internet & American Life Project, more than 66 percent of adults and 87 percent of teenagers use the Internet. With customization, technology hacking, participatory culture, open source innovations and pervasive computing and communication growing in strength, we are reaching a nexus that will allow museum professionals to utilize input from the general public via the web.

This trend is reflected in the *Exhibit Commons* ([www.exhibitcommons.org](http://www.exhibitcommons.org)), a new project lead by Liberty Science Center, that explores technology-driven societal forces and experiments with how they may influence science center/museum visits, whether guests are physically onsite or engaging from afar. Through the web and the experiences found at *Exhibit Commons*, guests will

be able to shape and mold actual exhibition and programmatic elements at the science center, expanding the definition of an interactive museum experience. Guests will not merely encounter prescribed, predetermined experiences; they will find numerous ways to change exhibits using creative problem solving.

Starting with the exhibits planned by Liberty Science Center for the *Exhibit Commons* (and hopefully others), guests will be invited to submit ideas for redesigning the functions and responses of onsite exhibition experiences by crafting their own exhibits – through harnessing the power of the Internet as a means to change the physical experience of visiting the science center. This open source-style approach will allow and encourage guests – those at the science center and those engaging long-distance through the *Exhibit Commons* web site – to study the operations and systems of certain exhibits. Guests can then suggest and develop new experiences by uploading their creations for science center review. Selected submittals will be implemented at the science center's discretion, and the museum's experience will change accordingly. Such "audience participation" challenges museums to open new doors to their audiences. This new "two-way" approach to exhibition development also poses new challenges of voice, authorship, rights and funding for museums.

Looking forward, a natural offshoot of this new, participatory approach to exhibition development is that guests will also have opportunities to be involved in open community invention and creativity, which may lead to wholly new developments in the science center field. As importantly, for Liberty Science Center the *Exhibit Commons* is intended as a long-term exploration for igniting innovation and incorporating relevant world changes into the experiences we provide, as well as into our organizational culture.

**Key words: Open Source, Participation, Collaboration, Commons, Innovation**

"Digital technologies, tied to the Internet, could produce a vastly more competitive and vibrant market for

building and cultivating culture; that market could include a much wider and more diverse range of creators; those creators could produce and distribute a much more vibrant range of creativity... (Lessig 2004).”

“The Commons’ is most often a finite but replenishable resource, which requires responsible use in order to remain available (Wikipedia 2005).”

## **Introduction**

Major shifts that will change how museums and their guests relate are on the horizon – shifts that will profoundly influence not only the way institutions operate, but also their reach and impact. This is reflected in the *Exhibit Commons*, a new project lead by Liberty Science Center, which invites museums to create elements where guests submit ideas for redesigning the functions and responses of an array of onsite exhibition experiences by creating exhibits of their own. This innovative, open source-style approach will allow and encourage guests – both those at museums/science centers and those engaging long-distance through the *Exhibit Commons* web site – to study the operation and systems of certain exhibits and then suggest, develop and submit new experiences. Selected submittals will be implemented, and the museum’s experience will change accordingly.

*Exhibit Commons* explores technology-driven societal directions and experiments with how they may change science center/museum visits, whether guests are physically onsite or engaging from afar. Through *Exhibit Commons*, guests will be able to shape and mold actual exhibition and programmatic elements at the science center, expanding the definition of an interactive museum experience. Guests will not merely encounter prescribed, pre-determined experiences; instead, they will find numerous ways to change exhibits by using creative problem solving. In a natural offshoot of this new approach, guests will also have opportunities to be involved in open community invention and creativity, which may lead to wholly new developments in the science center field. This effort will depend on the connectivity and ubiquity of the Internet, and with over 66 percent of adults and over 87 percent of teenagers using the

Internet, according to the Pew Internet & American Life Project (Lenhart, Madden and Hitlin 2005), this opportunity will be open to many. For Liberty Science Center, *Exhibit Commons* is intended as a long-term exploration of a means to ignite innovation and incorporate new, relevant world changes into the experiences we provide, as well as into our organizational culture.

In opening this channel of emergent collaboration – allowing visitor experience to be shaped by forces other than those traditionally encountered in the museum development process – Liberty Science Center is embracing and leveraging several societal trends, including customization, hacking, participatory culture and ubiquitous computing. *Exhibit Commons* will parlay these cultural influences into a new exhibit design process, one that could radically alter the future of museums.

### **Societal Forces**

Several processes being integrated into our culture are just beginning to make inroads within the museum field. So far, these trends have had little effect on the existing paradigm that the immutable educational experiences on the museum floor are often the same for everyone. However, we have an opportunity to truly transform how institutions approach guest experiences and the fundamental relationship between the guest and the museum.

### **Customization**

“Customers, whether consumers or businesses, do not want more choices. They want exactly what they want – when, where, and how they want it – and technology now makes it possible for companies to give it to them (Pine, Peppers and Rogers 1995).”

The first force, and perhaps the one that has been at work in the general marketplace the longest, is the move toward individual customization, recently expressed in such dramatic examples as the iTunes/iPod phenomenon and other MP3 sources and players. Customers can choose individual songs from a wider variety of artists than previously available through the standard distribution channels, and now they are able to create their own unique mixes and “soundtracks.” Consumers no longer have to accept

prepackaged music produced solely by well-known commercial artists. Other expressions of the nearly limitless set of choices new technology is offering consumers include radio wave body scanners that allow people to be measured for custom-made jeans; the ability to buy movies-on-demand at home anytime; and even the ability to create personalized coffee table books using their own photographs.

The museum/science center field has certainly taken the idea of customization to heart, incorporating it into specific exhibits. Examples include science news and headlines delivered via email from the American Museum of Natural History; personal experiment results delivered via the web and tied to users' Radio Frequency Identification (RFID) tags at The Tech Museum of Innovation; and creating one's own web page, a common offering at many science centers. Meanwhile, other institutions are attempting to incorporate personalization opportunities into the entire museum experience in an effective manner – Smithsonian's SI Guide, for example – although such efforts often face prohibitive financial hurdles.

### **Technology Hacking**

The second process at work is the public's increasing ability and means to improve or expand upon the performance of technologies in their lives through "hacking." Perhaps the oldest and most popular are the modifications, or "mods," that car owners have been implementing for years. They have been modifying car exhausts, shocks and body styles for some time; owners can change automotive microprocessors to improve engine performance or to exceed limits that were installed by car manufacturers.

Now, the Internet has brought people together from around the world to share and hack new electronic technologies. As new products emerge in the marketplace, a community of individuals quickly forms to explore creating variations on those very products.

A recent example of this at work is the development of web browsing on the Sony PSP™, available just days after the product's release, using the game "Wipeout," or hacks on the Treo™ 600/650 or the iPod. The impact of individuals' modifying technology to suit their own purposes becomes even more powerful when teamed with the third force: a community of innovators and creators.

## **Participatory Culture/Open Source**

“Property in open source is configured fundamentally around the right to distribute, not the right to exclude (Weber 2004).”

The rise of participatory culture, the third societal force at work, has given shape to several phenomena that are now almost commonplace, and has created opportunities that actively engage the public. Blog pages, with content and links supplied by both individuals and groups, are now some of the most popular and powerful sites on the Internet. According to the Pew Internet & American Life Project (Lenhart, Madden and Hitlin 2005), “nine percent of the general public writes blogs, and forty-four percent of U.S. Internet users have contributed their thoughts and their files to the online world.” As a measure of their popularity, some of the most visited Internet sites are Boing Boing (<http://boingboing.net/>), Gizmodo (<http://www.gizmodo.com/>) and Instapundit (<http://www.instapundit.com/>).

User reviews that help many online customers select the products they buy, i.e., Amazon.com’s “Customers who bought this book also bought... (<http://www.amazon.com/>),” represent another common online area for group input and involvement. Other arenas for sharing group and community resources are Flickr (<http://www.flickr.com/>), the shared photo site, and del.ici.ous (<http://www.del.ici.ous.com/>), the shared bookmark site. In fact, Flickr was one of the first places for the public to view photos of the London Underground bombings in July 2005.

The activity of people forming communities through the Internet is perhaps most powerful when teamed with the general public’s growing ability to participate in technological innovation, often using open source software or applications to solve technology issues, provide services and invent new products. Probably the most successful – and picked up by major corporations such as IBM – is the Linux operating system software, which released its first official version in 1994. Another recent example of this phenomenon is Firefox (<http://www.mozilla.org/>), an Internet browser that invites the general public to invent “extensions” to expand the software’s capabilities. Recently, this software surpassed 8.7 percent of the browser

market, (Lai 2005) with a self-reported 100,000,000 downloads (Mozilla 2005). Possibly the most well-known participatory innovation is the online encyclopedia Wikipedia (<http://www.wikipedia.com>). With over 900,000 articles encompassing over 3.2 million pages (Wikipedia 2006) that can be submitted by anyone – no matter their background – Wikipedia demonstrates the problems, as well as the possibilities, of this new open sourcing.

### **Pervasive Computing and Communicating**

“When you have a persistent connection to the Internet, you have access to a great deal more than a communication channel (Rheingold 2002).”

The progression of the technological advances and adaptations discussed above is enabled by the overall pervasiveness and availability of computing power and communications technology. During his keynote address on 10 June 2005 at the European Network of Science Centres and Museums (ECSITE) 2005 conference in Helsinki, Professor Yrjo Neuvo, Senior Vice President of the Nokia Group, estimated that by the year 2007 there would be 1.1 billion Internet users. Obviously, there is potential for a museum or science center to involve an ever-growing group of individuals in their projects.

At the same conference Professor Neuvo stated that there will be 2 billion cell phone users worldwide by 2006. This means businesses, including museums and science centers, will be able to reach their constituents – those in close proximity and those on the other side of the planet – by cell phone.

Connections and communications may be activated when customers or guests are at work, in school, traveling or even outdoors – as well as when they are at home. The “anyplace” of cell phones and other pervasive technologies will offer opportunities to touch peoples’ lives at “anytime.”

### **The Concept: the *Exhibit Commons***

#### **Inspiration**

“We use private rights to create public goods: creative works set free for certain uses. Like the free

software and open-source movements, our ends are cooperative and community-minded, but our means are voluntary and libertarian. We work to offer creators a best-of-both-worlds way to protect their works while encouraging certain uses of them – to declare "some rights reserved (Creative Commons)."

Property rights and fair use are impacted by the way the general public and the business sector use innovative new technologies, and this has consequences for the future of the Internet and creativity. Efforts are under way to provide ethical and fair protections for creators, while still empowering societal creativity and fostering a new approach to the issue. This is being led by the group Creative Commons and its founders, including Lawrence Lessig, author of "Free Culture." People in over 19 jurisdictions (countries) are currently participating in this process. It is from this group that the *Exhibit Commons* draws its name.

Meanwhile, staff and supporters of the science center and museum world, at our core, share one common goal – to benefit society. This has been accomplished by building a culture of freely shared ideas and concepts, whether in exhibit design, evaluation, educational program development, marketing initiatives or museum governance.

*Exhibit Commons* is a spirit of shared but protected work, of empowered creativity, whose aim is to benefit our guests, thus joining these two concepts.

### **What Is the *Exhibit Commons*?**

We hope the *Exhibit Commons* will be an ever-growing series of exhibits and experiences through which museums, science centers, visitor centers and others will encourage guests of all technological backgrounds to change and shape the exhibits' operations and their impacts. As part of initiating this effort, Liberty Science Center is including in the *Exhibit Commons* exhibits where the science center will publish sufficient operational information for guests to use our "platforms" to program, build or develop new museum experiences.

Although experiences will be reviewed by science center staff for relevance to the educational mission of both the center and the exhibition in which the exhibit is located – along with the accuracy of any science and technology content – all efforts will be made to allow guests to create a science center where they not only interact with exhibits but also create new experiences by interacting with other guests. At its heart, the *Exhibit Commons* allows each person's voice to be heard, shifting the dynamic of the exhibit development process from inside-out to outside-in, thereby creating a more fully participatory experience. The result is that we will be “giving” the science center to our visitors.

### **Objectives**

The science center hopes to accomplish several objectives through the exhibits it is including in the *Exhibit Commons*:

### **Learning through Activism**

Rather than just learning about science concepts and technologies, guests will be able to act – by creating new experiences and exercising the process of innovation – and work with the actual science and technology that are the foundations of the experiences. For new technologies and technological processes, whose operations are difficult to explain through museum interactives, the *Exhibit Commons* allows guests to learn by actually “doing” or utilizing the technology or processes – leading to deeper knowledge and understanding.

### **Innovative Experiences**

The science center believes that the public, when given access to the unique experiences it offers, will use what is found on the museum floor as starting points to create even more innovative exhibits. The power of “the many” to innovate and create new ideas is evident through the new wave of participatory cultural activities currently exploding across the world.

Liberty Science Center has a history of innovative programs and mediated experiences, such as its “Live From...” programs. We expect that the *Exhibit Commons* will build on past and current efforts. Although

the new exhibits planned for the institution's expansion are innovative, it is hoped the *Exhibit Commons* will provide a way to increase the innovative impact of our work even more.

### **Expanded Audience**

The idea of getting involved, of working with the actual “stuff” of the museum, may appeal to that segment of the general public that rarely, if ever, visits the science center because it believes that there is little to excite or challenge them. The *Exhibit Commons* will challenge those assumptions and offer these visitors a depth of engagement unlike other experiences. This potential audience segment will also be drawn in and empowered by the ability to show friends and family “their” exhibits.

### **Increased Relevance**

Despite our best efforts at touching guests “where they are,” a major planning concept in exhibition development, the true experts on what is meaningful to our guests are our guests. By allowing guests to create experiences in which they are interested, we gain a better understanding of their concerns and also increase the connection of our experiences to their lives.

### **Empowered Mission**

The act of sharing innovations and fostering group and individual creativity supports the concepts of “strengthening communities and inspiring global stewardship,” as Liberty Science Center’s mission states in part. Furthermore, the ability of people to be involved no matter their physical location may allow us to have more “world” impact.

### **Promote Organizational Change**

We believe that opening exhibit development to our guests and “letting go” of the process can help us foster a deeper culture of partnership and participation with others, as well as advance the development of how science centers and museums can learn to change in rapidly evolving times.

### **Implementation**

The *Exhibit Commons* effort is divided principally into two different sections.

The first section is the *Exhibit Commons* portal – a site managed and located on the Liberty Science Center web server, but not part of the science center’s web site. At this site, users can discover exhibits currently included in the *Exhibit Commons*, along with participating museums. The second area will be a discussion/blog page on current efforts and information for museums who wish to participate. Once a user finds an institution whose *Exhibits Commons* experiences they want to learn about, they can choose that organization and will then be directed its web site. Each museum would host its own *Exhibit Commons* experiences.

On the web pages that Liberty Science Center is linking to the *Exhibit Commons*, visitors will find discussions on the existing educational goals of exhibition elements, and they will gain an understanding of what the exhibit experience is about. Guests will be able to select an exhibit to explore and then download the technical and operational information, software and other resources needed to work with the exhibit; they also will get information on submittal guidelines for contributing to the *Commons*.

Submissions of completed work will be made through the web, via email or in person. They will be reviewed and selected by the science center through a process currently under development. Works chosen for inclusion will be put on public display through a variety of means, which may include specific *Exhibit Commons* hours and special events. Liberty Science Center also envisions hosting competitions; offering classes where people will learn the tools needed to alter exhibits; and giving annual awards for the best work. We expect to host conferences about expanding the *Exhibit Commons* concept and to engage in other means of dissemination, sharing and idea-building, as well.

## **Issues**

In starting to implement this plan, we have found ourselves wrestling with a series of issues and questions that perhaps require deeper exploration into the role of museums in society and the processes

that go on within their walls. Here are just a few:

### Exhibition Storyline and Interpretation

The development and design of exhibitions often follows the precept of creating a singular or main message (McLean 1993) upon which the entire exhibition is based. But what happens when one or more experiences within an exhibition are opened to public “hacking” and changes its content – and possibly message? How does the guest-created experience fit within the exhibition development model?

### Public Access

One cornerstone of the museum field has been the concept that access to the educational experiences found in the exhibition medium is open to all. In fact, there are many institutions that offer free hours or reduced admissions to expand the availability of their exhibits. The creation of *Exhibit Commons* may actually limit the availability of learning experiences, because guests may not have access to a computer, they may lack the necessary software or they may not have adequate knowledge to participate in the creation of new experiences.

### Public Trust

As recently as 2001, the American Association of Museums (Lake, Gotoff, and Windt 2001) discovered that in terms of content and information, museums are more trusted than governments and the press. This trust is an integral part of a museum’s ability to attract both the capital and visitorship needed for its support. Questions arise as to whether public participation in the museum experience – to the degree of *Exhibit Commons* – will undermine that trust.

### Vetting Experience and Content

As indicated in the paper, *Coase’s Penguin, or Linux and the Nature of the Firm* (Benkler 2002), a critical factor in the creation of open source communities and information groups is the overseeing of content by either the participants themselves or managers of the community or “commons”. In the case of *Exhibit Commons*, this oversight is being conducted by the institution itself, due to some of the issues mentioned

above. This could result in making the program less open than what is expected in a true “open source” community.

### Public Expectation and Operations

The public has grown to expect a certain type of experience at a museum. Often, levels of complexity in the content, expected community mores and values and other aspects of the visit are already known to potential visitors. By allowing for more unpredictable visitor-generated content, guests may encounter exhibits that provide experiences very different from what they expected, and this may give rise to financial issues, as visitors may not want to pay for what might be seen as objectionable work, in either content or quality.

### Support

Traditionally, funders and supporters of museums are familiar and comfortable with an exhibition's content and experiences. What funding and support issues will arise when they may not know what an exhibit might become?

### **The *Exhibit Commons* Today**

The *Exhibit Commons* was first launched in November 2005. Afterwards, it became clear that we needed to encourage other institutions to participate and, hopefully, facilitate one location where web users could find exhibits on which they would like to work. Liberty Science Center also needed to separate its experiences from the portal site.

In early February 2006, Liberty Science Center relaunched the *Exhibit Commons* and created the portal site, as well as an *Exhibit Commons* “exhibits” section on its own web site. The exhibits that Liberty Science Center is including are part of those that it is currently developing for a whole new suite of experiences, which is part of a \$104 million expansion renewal project. The expansion and renewal will add nearly 100,000 square feet of new space to the science center, and the entire lower floor will be transformed into the Center for Science Learning and Teaching, an 11,000 square foot learning resource

for schools, teachers, students and other groups. Nearly every exhibition in the science center is being replaced with new, innovative and exciting experiences including: *Breakthroughs*, *Communication*, *Eat and Be Eaten*, *Infection Connection*, *Our Hudson Home*, *Skyscraper*, *Young Learner* and others.

The expansion project places the science center in the enviable position of being able to examine its exhibits for Commons potential and then and implement the *Exhibit Commons* as part of the actual production of experiences as they are being developed. Again, the *Exhibit Commons* is not a specific physical location in the museum – it is a collection of experiences throughout the museum, open to change and modification through public input as described above. Currently, we are planning to include the following exhibits in the *Exhibit Commons* prior to the opening of the expanded science center, allowing guest submittals to be part of opening day experiences. Additional opportunities will be investigated as other exhibit concepts are further developed. The experiences are listed under the exhibitions in which they can be found. Liberty Science Center is partnering with artists, designers and programmers to develop some of these initial experiences, and these firms are listed with their exhibit(s).

## **Public Space**

### Lobby Art

The artist for this piece, funded through the New Jersey Economic Development Authority as part of the building expansion, has been selected and informed that the piece will be part of the *Exhibit Commons*.

Development Partner: Leni Schwendinger Light Projects Ltd. - <http://www.lightprojectsLtd.com>

## **Breakthroughs**

### T2ST – Science in Action

This multi-element, science/technology art piece being developed by Onomy Labs, located in Menlo Park, CA, is modeled on the concept of having a “Times Square” of science and technology in the science center. Web resources will provide live data to reflect the pulse of science and technology, and guests will be able to submit Internet sites for display on the art piece. Meanwhile, art, media, design and other university-level classes will be solicited to orchestrate all-new pieces for the installation.

Development Partner: Onomy Labs - <http://www.onomy.com>

## **Communication**

As befits an exhibition that explores this changing world, *Communication* will offer many of the *Exhibit Commons* experiences beginning on the day the science center reopens in mid-2007.

### Graffiti Wall

This exhibit will allow visitors to create digital graffiti using “spray cans” or “chisel markers,” and as part of the experience, the *Exhibit Commons* will allow guests to transform the digital output of those “cans” into new and more creative tools to expand the concept of dynamic digital graffiti.

Development Partner: Creative Machines - <http://www.creativemachines.net>

### Leave Your Handprint

At this exhibit, visitors can leave a digital handprint on a wall to mark their visit, communicating like early humans who left handprints in caves around the world. Through the *Exhibit Commons*, Liberty Science Center will allow guests to explore and change the kinds of marks they can leave when they press their hands onto the wall.

Development Partner: Chedd-Angier Productions - <http://www.chedd-angier.com>

### Language Karaoke

As with a Karaoke bar, guests will follow along with a video, but instead of a song, they will learn to speak a sentence in a foreign language. We will also invite guests to contribute MP3 recordings of languages not covered in the exhibition in order to expand the cultural diversity of the exhibit.

Development Partner: Chedd-Angier Productions - <http://www.chedd-angier.com>

## **Infection Connection**

### Lab

The first non-electronic *Exhibit Commons* exhibit will be geared toward professionals in biological content areas, and this experience will invite medical and health specialists, as well as students, to develop

“experiment-like” activities to be performed in a staffed area, utilizing using tools and computer “lab companions” to guide people through the “experiments.”

## **Our Hudson Home**

### The Narrators

Guests will have the opportunity to hear what the Hudson River and Estuary mean to a variety of people. Visitors will be invited to record their own interviews to expand available conversations or develop other video productions for display in the exhibition area.

## **Skyscraper**

### Skyscrapers in Our Media

At this exhibit, we are providing both media clips and artifacts representing how skyscrapers have become part of our culture as expressed in film and other popular media. Through *Exhibit Commons*, we will encourage members of the public to create video productions that represent how skyscrapers are a part of their lives or ask them to provide their own “skyscraper-related” physical artifacts.

### On Top of the World

This exhibit presents 360-degree views from observation decks of skyscrapers around the world. We will invite guests to create the same from skyscrapers in their communities, by producing and sharing other unique 360-degree views.

Development Partner: Quatrefoil Associates - <http://www.quatrefoil.com>

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