Case Study: International Spaceflight Museum

Principal Author:

Katherine Cochrane (Kat Lemieux in SL)
Founder, The International Spaceflight Museum
email: kat.lemieux@gmail.com
http://slispaceflightmuseum.org
+1 321.432.9703

What is the International Spaceflight Museum?

A virtual museum

The International Spaceflight Museum (ISM) is a real museum, with educational goals and high standards of building and scholarship, that happens to exist only within the virtual world of Second Life.

An all-volunteer organization

Unlike many other educational projects in SL, the ISM was conceived and executed completely independent of any real world organization, by people who met one another in SL and just decided that creating and operating such a museum would be a worthwhile, fun project.

A collection of space-related information from around the (real) world

The items in the museum's collection fall into several broad categories: spacecraft (historic rockets, space probes, space stations and landers), astronomy-related objects (planet/solar system models and a planetarium), space-related artwork and posters, and guest exhibits. Our spacecraft include over 50 full-scale models of launch vehicles and sounding rockets from the space agencies of over a dozen countries, and two from a private space company. Scaled Composites, private enterprise builders of the X-Prize winner, SpaceShip One and its launch plane, the White Knight, provided us with drawings that enabled us to create accurate models of these historic craft.

A demonstration of how virtual worlds can be used for learning

Just as Slate magazine found success as they discovered new ways of doing journalism online thanks to the nature of the new internet medium, we believe 3D virtual worlds present opportunities to forge new methods of putting learning methods in the hands of people who use them. Every educator I've shown our museum to has told me about his or her excitement engendered by the ideas they have after seeing what we've done with interactivity, full-sized models in the round, and creative presentations. From the model of Canada's robotic arm used on Space Shuttle and the International Space Station, which visitors can try out themselves, to the incredible tour of the solar system with platforms at each scale-modeled planet, the immersive effect of Second Life opens up broad vistas of imagination and visualization impossible or incredibly expensive to accomplish in the mundane world.

History of the ISM

Origins

Oddly enough, this educational project started out as an exhibit for an art festival, Burning Life '05, the Second Life analog of the annual Burning Man extravaganza. Two of our founders, Gearsawe Stonecutter and Kat Lemieux, were invited to use the land parcel at Burning Life that Greene Hornet had won but had no plans for, and built a "derelict" space station in the week before the show opened. One of the exhibit's visitors was Shaun Altman, who

confessed to Kat that he had a dream of starting a museum of spaceflight. A few days later, Kat sent him a proposal on September 6th, and with Shaun's concurrence started the Spaceflight Museum Planning Group.

Development of the Spaceflight Museum Planning Group

Naturally, Shaun, Kat, Gearsawe and Greene were the first members of the planning group. After Burning Life closed, Greene graciously allowed us to use some of his land as a "sandbox" to start building items to include in the proposed museum's collection. Gearsawe started working on the Canadarm model, which inevitably drew attention from passers-by, several of whom subsequently asked to join the group.

Participants and Contributors

The museum planning group has been a closed group since its beginning, with membership grown by invitation only. Most of the planning group members have contributed exhibits, land use, design, presentation or organization ideas, and in some cases financial aid to the museum. Contributions by non-group members have also been significant, especially after the museum opened on its own island. As mentioned earlier, the ISM is not supported by any external organization, so several of the group members made and continue to make some substantial financial donations toward the purchase and land use costs of having the island at Spaceport Alpha. Monetary contributions from the general SL public and gift shop sales have covered about half of the monthly operating expenses (land use fees) so far.

Concept Development

Beyond the initial proposal, which outlined the purpose and scope for the museum, the planning and development has been accomplished as a collaboration among all the museum planning group's members. In mid-October, weekly meetings open to all group members were instituted, and a group Wiki was started to provide an archive of ideas and meeting notes. The Wiki later grew to include supplementary documentation for some of the exhibits, using weblinks embedded in notecards served by touch-enabled signs. Through encouraging open discussions and brainstorming sessions, the design for the individual exhibits and eventually the entire museum were created with ideas created and accepted by the entire group.

Acquiring and Building Spaceport Alpha

In April 2006 the Spaceflight Museum Planning Group decided to buy an island to house the museum. Using funds collected by the tipjars and contributions from group members, an order was placed with Linden Lab for an island by group officer, Troy McLuhan. Remarkably, the island was available in a very short time after the order was placed, and serious work began on terraforming the land and placing existing exhibits, and creating new ones. The work from the previous six months paid off as almost everyone pitched in to meet the announced opening date of 18 June.

Since the opening, development has continued unabated, and shows no signs of slowing down.

ISM Grand Opening

After its beginning in early September 2005, the ISM Grand Opening on Spaceport Alpha took place from 18-25 June 2006. During opening week, planning group members and a guest speaker from NASA gave presentations and tours of the island which were very well attended, thanks to some wonderful cooperation from SL bloggers and SL press (most notably the Metaverse Messenger) who helped publicize the events.

Subsequent Events

Since the opening, the planning group has put on a number of events, including a remarkably successful showing of the recent NASA Space Shuttle launch. At least once a week there is an educational lecture, either by a museum staff member or a guest speaker. Scheduled tours are conducted by trained docents, and frequently ad hoc tours are offered by staff who happen to be available when visitors show an interest in being given an inside look at some aspect of the museum.

Building an Educational Project with Volunteer Labor and Donations

Volunteer Motivations and Motivating

The ISM was developed by a 100% volunteer organization, so analyzing and implementing motivations for a non-paid workforce has been necessary since day one. It is obvious that people who come to Second Life and decide to volunteer to participate in such a project without pay need to get something out of it, or they will lose interest and move on to other activities. Incentives provided by the ISM, therefore, include a high level of public recognition for work contributed. Every exhibit is labeled with the builder's name(s), and documents include bylines of the people who wrote them. Contributors who run stores or sell products and services are allowed to post an interactive sign in a prominent place in the museum advertising their business. At every possible opportunity, personal recognition is provided to let the public see who has worked on this project, whether in our website or by mentioning them to reporters during interviews, or from the stage during presentations.

Another benefit provided to planning group members is the opportunity to learn skills from each other. Whether it is basic SL building tools, or sophisticated techniques for using PhotoShop or other 3rd party software, or research methods, group members have been very willing to help each other learn and develop their abilities to better contribute to the museum's development.

Finally, but certainly not the least significant incentive for working on the ISM project, is the fact that it is fun.

Funding an all-volunteer, in-world educational project

In anticipation of eventually buying an island, the museum planning group created a "tipjar" to collect donations from visitors and other well-wishers. Proceeds from the tipjars placed at the museum's early temporary location and at supporter's stores netted almost L$28,000 before the Spaceport Alpha grand opening, which were applied to the cost of buying the island. Since the grand opening, donations received this way have increased, so that between the tipjars and sales of items in the gift shop (which first opened at the same time as the grand opening) pay about half of the monthly land use fees for the island. Presently, the shortfall is made up by contributions from other space-related organizations who have been provided room for exhibits on the island, and by monthly donations from several group members.

Into the Future

Incorporating a non-profit organization for a virtual world project

Early in the planning and development stages of the ISM, the idea of creating a non-profit organization had been discussed, but it was only after the opening that we realized the museum will not be self-supporting using our current funding methods. About this time several of the group officers met with Larry Pixel of NMC, who advised that to obtain grants it is a requirement to either be a project of a Real Life, accredited educational institution, or a 501(c)(3) non-profit corporation. Since that meeting a committee has been preparing background materials for an application for 501(c)(3) incorporation, and expect to have that completed within a few months.

Building links to other projects and organizations

So far, the ISM has provided pavilions for three external, Real Life organizations who wanted a presence at the museum for the purposes of reaching an appropriate audience, providing opportunities for collaboration between the museum's developers and the external organizations' in-world staff, and to support the museum. These organizations are the Second Life Planetarium (funded by Elon University and built by Elon astronomy professor, Chaac Amarula in SL); the National Physical Laboratory (NPL) from the U.K., and NOAA, a U.S. government agency.

The ISM has also worked on co-marketing projects with the New Media Consortium, who own several islands in Second Life. A copy of one of the ISM's models, the Voyager I, is on permanent loan to the NMC for display at the Brooks Library on NMC Campus, and a copy of Chaac Amarula's Planetarium is also displayed on NMC Campus, which loan was facilitated by the contacts between officers of these groups.

Other exhibits have been loaned out to various SL organizations for short-term display during festivals and other events. These cooperative activities lead to increased awareness of the museum among the SL public, and build good public relations in the SL community at large.

Growth Opportunities

Almost as soon as the museum opened, it was apparent that if more land was available, there were many opportunities to enhance the quantity and complexity of exhibits, and provide room for collaborative projects such as the one with NPL. The name "Spaceport Alpha" was designed, in fact, to allow expansion to "Spaceport Bravo" and "Spaceport Charlie", etc. as we obtain funding and projects for expansion.

In the meantime, new exhibits are constantly being added to the museum's collection, and existing ones are being enhanced with more detailed builds and documentation. The potential for growth both physically and in terms of innovative information presentation seem limitless, and the ISM planning group intends to continue to develop this project for the foreseeable future as a "real life virtual museum".

Author's Biography

Katherine Cochrane, B.A., Special Studies (Linguistics), the University of Hawaii at Manoa, 1985, has been involved in new media since the late 1980s. She wrote about using hypermedia for organizing and distributing information pertaining to the design and building of the International Space Station as part of the "Automation, Robotics and Design Knowledge Capture Plan", a document prepared for Boeing Aerospace and Engineering to deliver as part of the contract requirements for NASA's Space Station program. Since that time, she has worked as an independent technologist in the related fields of compact disc data storage and electronic publishing. She has had published a number of articles in trade and academic journals about these topics. In 1995 she began publishing the first independent Website about compact disc technology, industry and applications at http://cd-info.com, a site that continues to serve the public by providing accurate information in this field.