Ocean Today Kiosk:

Final Summary Report

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Smithsonian Institution
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Preface

I am grateful for the teamwork, support and patience demonstrated by the following staff and interns: Andrew Pekarik, Ioana Munteanu, and Jarrid Green (staff) and Lindsay Kelly, Megan Lee, Rebecca Lester, and Kristine Sudbeck (interns). This report was written by Megan Lee, to whom I extend special thanks.

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Carole Neves, Ph.D.

Director
Office of Policy and Analysis

Introduction

Ocean Today is an interactive kiosk developed by the National Oceanic and Atmospheric Administration (NOAA)'s Communications and Education Division. It is located on the first floor of the National Museum of Natural History's *Sant Ocean Hall*. The kiosk consists of two 32-inch plasma touch-screens, mirrored by 42-inch monitors that are placed high above the touch-screens and a scrolling LED marquee that displays updated news reports relating to the kiosk.

Purpose

The NOAA commissioned the Smithsonian Office of Policy & Analysis (OP&A) to conduct a three-phase study on the *Ocean Today* kiosk. The first phase was to track and observe visitors who stop or pass the kiosk in order to test various improvements that are made to the kiosk throughout the duration of the study. The second phase was a combination of surveys and data analysis that would examine how people use the *Ocean Today* kiosk. The third phase recreated the second phase after changes and improvements were made based upon the initial research.

List of Studies

1. Attraction Observation Studies
    a. Baseline
    b. New Attract Screens
    c. "Ocean Stories" vs. "Ocean Videos"
    d. Final attraction study with new banner
2. Decision Time Study
3. Video Access Analysis
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        i. Observation and Interview Study with Improved Sound
5. Interesting or Frequently Occurring Visitor Suggestions

Studies

1. **Attraction Observation Studies**

   Four attraction and observation studies were conducted in order to test ways to improve attraction to the *Ocean Today* kiosk: a baseline study, a study with new attract screens, a study with two alternative signs placed over the maps, and a study with a banner placed between the two stations of the kiosk.

   A visitor who "passed" the kiosk was defined as one who walked from left to right in front of the kiosk crossing a predetermined boundary line on the floor. A "stopped" visitor was one who stepped into the *Ocean Today* carpeted area and stopped for at least two seconds while looking toward the kiosk.

   Baseline Study. The baseline study took place in five one-hour sessions over three different weekdays in May 2009. Based on a total of nearly 4,000 visitors observed, an average of 5.5% stopped at the *Ocean Today* kiosk.

   New Attract Screens. New attract screens, featuring dynamic designs and music were installed. The study was conducted over the course of four one-hour sessions on different days and at different times in September and October of 2009. About 1400 visitors were observed. On average, 5.9% of visitors stopped to observe the kiosk, which is comparable to the average in the baseline study. In other words, the new attract screens did not improve the attraction rate.

   "Ocean Stories" vs. "Ocean Today". Two signs that differed only in wording were placed over the maps on the kiosk and attraction was measured separately for each sign. Each sign was tested for four one-hour sessions on three different days in March and April, 2010. The sign that read "Ocean Stories" resulted in an average of 7.4% of nearly 1700 observed visitors stopping at the kiosk, while 3.5% of nearly 3,900 observed visitors stopped when the "Ocean Videos" sign was displayed. The former is 2% above the baseline average and the latter is 2% below the baseline average.

   Banner Study. A large banner containing images and words of some of the most popular video content was placed in the center of the kiosk in order to attract more viewers. The banner and the "Ocean Stories" sign were tested together in four one-hour sessions in August, 2010, resulting in an average of 9.5% of approximately 1700 observed visitors stopping at the kiosk. This is 2% above the average for only the "Ocean Stories" sign and 4% above the baseline average.

2. Decision Time Study

Thirty kiosk users were observed in order to determine how long the menu screens needed to be held (before reverting to the attract screen) in order for visitors to be able to make a decision about what category or video to view. The thirty users together faced an eight-option decision (i.e., any screen except for "Main" and "Discoveries") a total of 45 times. Decision times ranged from 1 to 17 seconds, but only two visitors took longer than 10 seconds. The average amount of time it took a user to make a decision was 5.4 seconds and the median time was 4 seconds. (Figure 1).

Eight-Option Decision Times
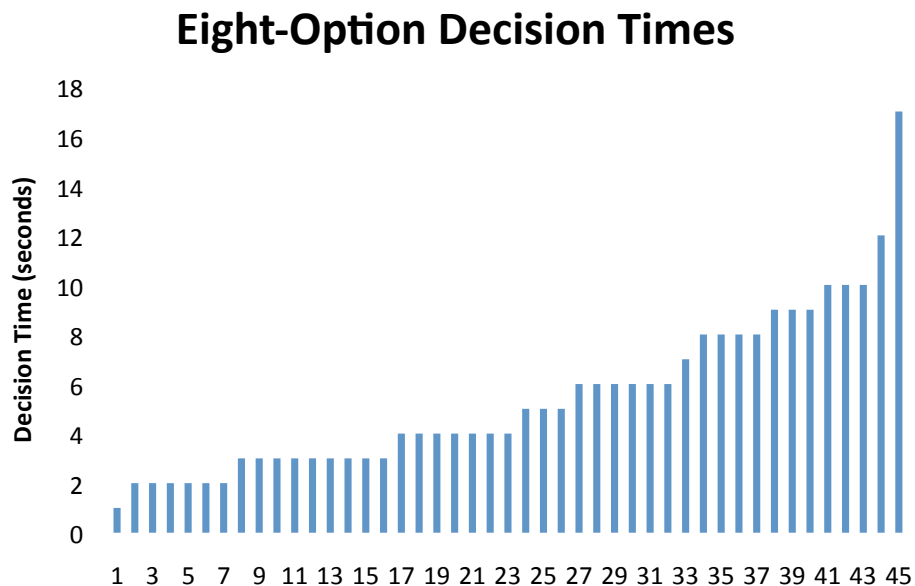
(Figure 1)

It is interesting to note that some visitors took longer to decide because they would go back and forth from the main screen to the four option screens in order to optimize their choices. However, most were satisfied with the best choice that was also convenient.

3. Video Access Analysis

Analysis of video access data was conducted in order to document the appeal of individual videos (based on average monthly access), to identify images or keywords that could be placed on the banner to attract kiosk users and provide information that may be useful in long-term rotation of kiosk videos.

Access data from September 2008 through January 2010 indicate that of the four video categories, *Discoveries* is the most popular, with an average of 1,945 accesses per month.

Ocean Life comes in second with 1,749 accesses per month, *Science and Technology* with 1,260 accesses per month and *Ocean News* with 1,048 views per month.

The overall average access for individual videos was 409 per month (median 316). Individual videos with the highest average accesses per month were *Titanic (1,355), Top Predator (877), Dumbo Octopus (837), Otter (838), and Healthy Beaches (655).*

4. Rating Surveys

In the rating survey portion of the study, kiosk users were asked to rate the kiosk and videos on a scale of *poor, fair, good, excellent* and *superior*, or on a parallel scale of smiley faces for younger users. The baseline survey was conducted in November 2009. The survey was administered again in August 2010 after the kiosk's sound volume had been increased.

The baseline study showed that on average, 28% of kiosk users gave the *Ocean Today* kiosk a *poor, fair* or *good* rating; 54% gave it an *excellent* rating; and 18% gave it a *superior* rating. After the kiosk's sound was modified, 25% of users gave the kiosk a *poor, fair* or *good* rating; 36% gave it an *excellent* rating; and 37% gave it a *superior* rating. The difference in satisfaction with the kiosk between the two surveys is significant. Improving the sound of the *Ocean Today* kiosk improved the number of *superior* ratings by nearly an additional 20%.

The kiosk after sound modifications exceeded the Smithsonian Institution's average ratings[1] of 32% *poor, fair* or *good*; 49% *excellent* and 20% *superior*, as well as the rating that exiting visitors give the National Museum of Natural History as a whole. (Figure 2)

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[1] Across all Smithsonian museums and exhibitions.

Visitor Satisfaction Ratings
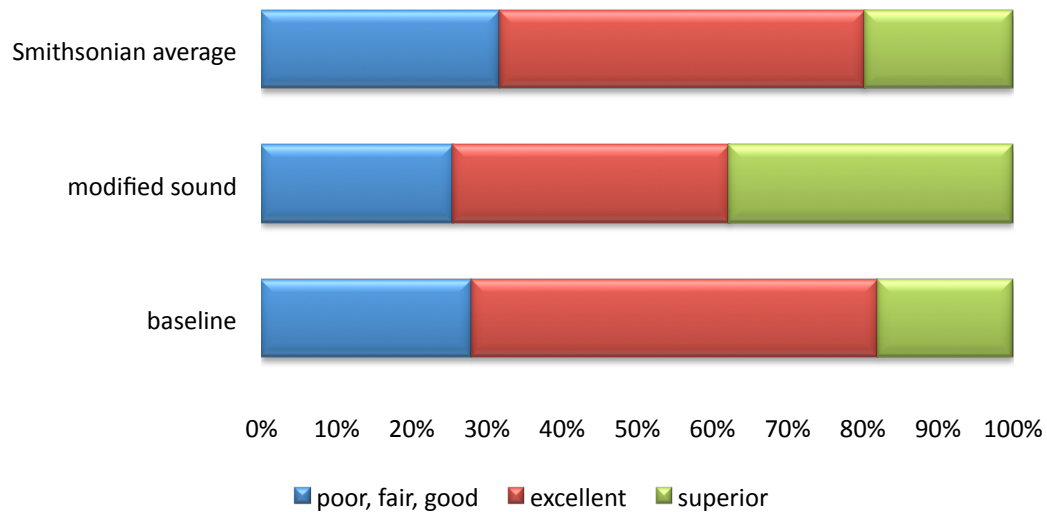
(Figure 2)

5. Interesting or Frequently Occurring Visitor Suggestions

The following are relevant visitor suggestions pulled from two studies in which visitors were given an opportunity to comment on the *Ocean Today* kiosk. Comments were collected when visitors were asked for ideas for improvement at the end of the rating surveys. Additional comments were collected during an interview and observation study that was conducted after the sound was modified. The study reexamined how visitors felt about the information covered by the videos, the *Ocean Today* display and the technology of the kiosk.

Seating. Many visitors asked for seating, e.g., "stools for younger children who have trouble reaching the lower screens," and "chairs and benches closer to the space."

More Information or different videos. Many visitors asked for more information on particular videos. To list a few:
- "Modernize the video clips using the BP oil story."
- "Go more in depth on Hurricane Hunters and have more variety."
- "They could have more videos on helping the earth."
- "Have an exhibit or display about trash in the ocean that could raise awareness of how ocean litter impacts wildlife."
- "I would add information on tracing ocean fossils."

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- An eight-year-old girl who viewed the 'Life of a Sea Otter' video with her family wished there had been more images of real wildlife rather than pure animation.

More Interactivity. Several visitors asked that the kiosk be more interactive—one of those respondents said, "What is the purpose of the globe? I would make it interactive, for example show (on the map) where the dolphins live while watching a video about dolphins." Another visitor mentioned, "My kids love the videos; however, video games would be more instructional and fun… something that is more interactive."

Summary

Much information has been gathered about the *Ocean Today* kiosk since the beginning of this study. In particular, there is now a more complete understanding of what attracts visitors to the kiosk, visitor satisfaction and suggestions regarding the videos, satisfaction with the kiosk's display, and visitors' overall experience with the kiosk.

The **attraction observation studies** revealed that including an "Ocean Stories" sign over each touch-screen monitor and a new banner in the center of the kiosk nearly doubled the average number of people who stopped to observe or interact with the kiosk.

The **decision time study** determined that 20-30 seconds would be an efficient delay on each of the eight-option menus in order to ensure that users had enough time to select a video while simultaneously minimizing the time that the monitors are not actively displaying a video or the attract screen.

Video access analysis indicated the popularity of the four video categories as well as the popularity of individual videos based on access. This information was most useful for determining the rotation of videos as well as keywords to put on the banner that could improve visitors' attraction to the kiosk.

The visitor **rating surveys** revealed that although baseline satisfaction ratings were approximately on par with Smithsonian Institution's overall average, increasing the sound level nearly doubled the number of *superior* ratings the *Ocean Today* kiosk received.

Visitors' suggestions provided further information to consider in improving the *Ocean Today* kiosk. In particular, visitors requested additional seating near the kiosk, as well as a greater amount of information in each video. Visitors also suggested some topics they would like to see covered by the *Ocean Today* kiosk.