

# ***A Closer Look at the Visitor Experience: An Analysis of Visitor Comment Cards*** **Evaluation Report**

Report Written by Christine Reich & Elizabeth Kunz Kollmann

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Museum of Science, Boston  
Research and Evaluation Department  
Museum of Science  
Science Park  
Boston, MA 02114  
(617) 589-0302  
E-mail address [researcheval@mos.org](mailto:researcheval@mos.org)  
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## EXECUTIVE SUMMARY

In an effort to learn more about ways the Museum of Science can revise its existing comment card system so that it can better monitor the quality of the visitor experience, the Museum of Science Research and Evaluation Department, under the guidance of the Visitor Services division, set out to accomplish the following goals:

- Develop a detailed system for coding comments provided through the museum's existing electronic and physical comment cards;
- Determine the main visitor concerns that were expressed through the current comment card reporting system; and
- Explore how alternative sampling techniques might influence the types and frequency of responses visitors leave through the comment card system.

Findings from this effort are expressed in this report.

Methods used to conduct this study include the following:

- A systematic review of all comment cards made by visitors between August 1, 2006 and July 31, 2007; and
- A comparison of comments made by visitors using our existing comment card system to those made by a random sample of museum visitors in July 2007.

Analysis of comments made by visitors through our existing comment card system during the time period of August 2006 through July 2007 identified a number of areas that appear to be of greatest concern to visitors. These areas include the following:

- Cleanliness/maintenance;
- Monetary value;
- Information availability;
- Staff interactions;
- General quality;
- Crowdedness; and
- Content.

This analysis also revealed areas worthy of visitor praise (based on the low number of negative comments and/or a high number of positive comments), some of which overlap with the areas of concern (as some categories received a high number of both positive and negative comments).

These include the following:

- General quality;
- Staff interactions;
- Accessibility;
- Comfort;
- Hours/time; and
- Safety.

Comparison of comments made by visitors through our existing comment card system to comments made by visitors who were randomly selected to complete a comment card reveal that

the comments made by visitors through the existing system are more negative than those made by randomly selected visitors. This suggests that the existing comment card system is not a good predictor of the overall feelings of the majority of visitors to the Museum.

Based on these findings, there are a number of recommendations for moving forward:

- *The Museum should find ways for departments to work together to improve two areas of high visitor concern that cut across multiple departments, cleanliness/maintenance and information availability.*
- *More investigation is required to examine the link between the perceived monetary value of the institution and the conditions under which visitors visit the Museum.*
- *Further exploration should examine the overall quality of the interactions our visitors have with Museum staff members.*
- *To better monitor how conditions in the Museum impact visitors' perceptions of the overall quality of their experience and their subsequent willingness to return or recommend the Museum to others, the Museum should develop a system that relies more on comments from randomly selected visitors.*

## TABLE OF CONTENTS

	<u>Page #</u>
Executive Summary .....	ii
I. Introduction .....	1
II. Methods .....	2
III. Findings and Discussion.....	4
1. Comments made by randomly selected visitors were more positive than comments made by visitors using the current comment card system.....	4
2. Areas that appear to be of greatest concern to visitors are cleanliness and maintenance, monetary value, and information availability, amongst others..	6
3. Areas where there were few negative comments included comfort, hours/time of the institution, accessibility and safety.....	13
4. Areas of greatest praise are the general quality of the museum experience and staff interactions.....	14
5. Comparisons between comments left during and after <i>Body Worlds 2</i> suggest that there may be differences in the quality of the visitor experience during times of peak visitation.....	15
IV. Conclusion .....	18
References .....	20
Appendix A: Summary of comment coding system.....	21
Appendix B: Frequency of visitor comments by visitor experience categories..	26
Appendix C: Frequency of visitor comments by museum area categories.....	29
Appendix D: Frequency of visitor comments by visitor experience and museum area categories.....	32

## I. INTRODUCTION

Visitor comfort is an important part of the museum experience. It is linked directly to the mission of the institution as an educational organization and its effectiveness as a customer service oriented business. Prior research from the field of visitor studies has shown that visitors learn more when their basic needs are attended to (Falk & Dierking, 1992) and that perceived care and comfort are important in attracting traditional non-visitors to attend museums and in encouraging their return (Hood, 1993).

Comment cards serve an essential function for museums as they can alert museum staff members to areas where more work is needed to increase visitor comfort and satisfaction. The Museum of Science, Boston has consistently provided visitors with the opportunity to leave comments about their experience. Traditionally, these comments have been categorized according to the department for which they were the most relevant (for example, Exhibit Maintenance or Science Central). While this categorization process is helpful for identifying action items departments should attend to, it does not provide a clear indication of the issues that are of greatest concern to our visitors, nor does it offer direction for ways departments can coordinate efforts to resolve institutional challenges.

Research conducted by other museums has shown that there are benefits to the systematic review of comment cards left by museum visitors, if implemented properly. The St. Louis Science Center has an exemplary comment card system that includes a scoring system that tracks changes in visitor's perceptions of the value of their experience over time, and is delivered to the Center's management team on a monthly basis. This comment card system includes a rigorous sampling method, whereby staff members actively seek visitor comments by handing out self-addressed, postage paid comment cards to randomly selected visitors, and a detailed coding system where the number of positive and negative comments made about specific areas of the Science Center operations are counted each month. Research conducted by other museums and by marketing professionals from the for-profit sector caution, however, that comments provided through a comment card system where visitors are left to self-select whether or not to participate do not always provide information that can be generalized to represent the views of the overall population (Pekarik, 1997; Sampson, 1996).

In an effort to learn more about ways the Museum of Science can revise its existing comment card system to better monitor the quality of its offerings and make informed decisions regarding the best way to allocate resources to improve the visitor experience, the Research and Evaluation Department, under the guidance of the Visitor Services division, set out to accomplish the following:

- Develop a detailed system for coding comments provided through the Museum's existing electronic and physical comment cards;
- Determine the main visitor concerns that were expressed through the current comment card reporting system; and
- Explore how alternative sampling techniques might influence the types and frequency of responses visitors leave through the comment card system.

Findings from this effort are expressed in this report.

## II. METHODS

Members of the Research and Evaluation Department reviewed all visitor comments posted on Quark from August 2006 through July 2007. This time period was chosen so that comments made during the run of *Body Worlds 2* could be compared to comments made post-*Body Worlds 2*. The purpose of this review was to develop a detailed coding system that could be used to identify areas of visitor concern and praise. This review process included multiple steps as described in the following protocol:

- Each “comment card” was reviewed to determine if it should be divided into multiple comments. Comment cards were broken down into multiple comments if multiple visitor concerns were addressed on a single card. A “comment” was defined as an idea that would make sense to the reader if it was read in the absence of the other content contained on the card. In total, 797 individual comments were identified and included in this review.
- A constant comparative method was used to place visitor comments into similar categories related to visitor concerns (Glaser & Strauss, 1967). First, an evaluator created a coding system by reviewing two months of visitor comment cards (one month during *Body Worlds 2*, and another month post-*Body Worlds 2*) and placing individual comments into similar categories. After this initial coding structure was in place, the evaluator then reviewed two additional months to see if changes needed to be made to the coding structure based on this additional data. This process continued until all 12 months of visitor comment card data were coded. After this process was complete, a second evaluator reviewed two months of data (one month during *Body Worlds 2*, and another month post-*Body Worlds 2*) using the defined coding system to see if the same categorizations of comments could be made. Based on the results of this evaluator’s review, the coding system was again revised and this process continued until the two evaluators had at least 85% agreement on how they independently coded the visitor comments. The use of two researchers to verify and code the data is a method of triangulation that is used to enhance the validity of qualitative research (Denzin, 1978).

Based on discussions with the Visitor Services Department, staff at other institutions, and the codes that emerged using the process described above, the Research and Evaluation Department placed each visitor comment into three different groupings:

- Visitor attitude categories: These categories identify whether the comment made by the visitor was positive, negative, or neutral.
- Visitor experience categories: These categories focused on clarifying the area of concern as identified by the visitor.
- Museum area categories: These categories placed the visitor comment according to the area of the Museum that would most likely address this concern. In some cases, organizationally unrelated departments (such as Publications and Web) were lumped together when it was difficult for the evaluator to separate those departments from one another based on the content of the visitor comments.

Table 1 provides a listing of the different categories that emerged from the comment card data in each of these three groupings. (See Appendix A for a detailed description of each visitor experience category and example comments for each).

<b>Table 1: Categories for each of the three comment card groupings</b>		
Visitor attitude categories	Visitor experience categories	Museum area categories
<ul style="list-style-type: none"> <li>• Positive</li> <li>• Negative</li> <li>• Neutral</li> </ul>	<ul style="list-style-type: none"> <li>• General Quality</li> <li>• Cleanliness/Maintenance</li> <li>• Monetary Value</li> <li>• Suggestions</li> <li>• Information Availability</li> <li>• Content</li> <li>• Staff Interactions</li> <li>• Crowdedness</li> <li>• Comfort</li> <li>• Other</li> <li>• Hours/Time</li> <li>• Accessibility</li> <li>• Safety</li> </ul>	<ul style="list-style-type: none"> <li>• Food Services</li> <li>• General Exhibits</li> <li>• Gift Shop</li> <li>• Membership</li> <li>• Museum</li> <li>• Non-Museum</li> <li>• Normal Programs</li> <li>• Other Program</li> <li>• Paid Add-ons</li> <li>• Publications/Website</li> <li>• Restrooms</li> <li>• Security/Parking</li> <li>• Special Exhibits</li> <li>• Tickets/Information</li> </ul>

Using three coding categories to identify each comment allows the Museum to determine the following:

- The types of concerns/complaints visitors have about their experience (identified by crossing the visitor experience categories with the negative attitude category);
- The aspects of their experience visitors find the most praiseworthy (identified by crossing the visitor experience categories with the positive attitude category); and
- The Museum departments that are best suited to take action to address the area of visitor concern (identified by crossing the Museum area categories with the negative visitor attitude category).

In addition to the coding of existing comment cards, members of the Research and Evaluation Department also handed out visitor surveys. These surveys contained the same questions as the current visitor comment card. Participating visitors were randomly selected from different areas of the Museum during July 2007. Comments received through this surveying process were then compared to those comments received through the traditional comment card system during the same time period (July 2007) using the above described coding scheme. In total, 58 comments were received from the random sample of visitors, and 78 comments were collected through the self-selecting process.



### III. FINDINGS AND DISCUSSION

#### *1. Comments made by randomly selected visitors were more positive than comments left by visitors using the current comment card system.*

Overwhelmingly, most comments made by visitors using the existing, self-selected comment card system expressed negative attitudes or feelings about a part of the visit experience, with 74% negative comments made by visitors during July 2007. This matches the trend found in all of the comments for the August 2006 through July 2007 time period, where 72% of the comments mentioned negative aspects of the museum visit.<sup>1</sup> In comparison, comments made by visitors who were randomly selected to provide feedback by members of the Research and Evaluation Department largely expressed positive opinions about their experience at the Museum. Only 29% of the comments in this group were negative, while 64% were positive and 7% could be described as neutral.

While there were differences in the attitudes and feelings expressed in the two groups of comments, the visitor experience categories mentioned by visitors did not vary greatly between the two groups. Those categories that received the highest number of negative comments in the existing comment card system also appeared in the comments made by the visitors who were randomly sampled (albeit, in different orders with regards to frequency of occurrence). The same is true of the categories that received the highest number of positive comments in the existing comment card system. Not surprisingly, more categories appeared in the negative comments made through the existing system, and more categories appeared in the positive comments of the randomly selected visitors. This can be explained by the fact that there were more negative comments in the self-selected group and there were more positive comments in the randomly selected group. Tables 2 and 3 provide comparisons of the visitor concern categories that emerged in the self-selected (existing system) and randomly-selected comments (listed in order of frequency of occurrence).

These findings confirm what has written concerning the usefulness of visitor comment cards for visitor studies (Pekarik, 1997). While comments from self-selected visitors can provide an indication of the general areas of concern/praise for the Museum by visitors, they cannot be used to monitor changes in perceptions of the institution overtime because the frequency of occurrence of the views expressed by visitors using a self-selected system are not reflective nor representative of the broader museum visitor population. This finding should be kept in mind as you read the remainder of the report, which addresses only those comments made by visitors using our existing, self-selected system for collecting visitor comments.

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<sup>1</sup> This was true during the *Body Worlds 2* time period (76%) and the post *Body Worlds 2* time period (64%).

<b>Table 2: Comparison of the negative visitor experience categories mentioned by randomly-selected and self-selected visitors in July 2007</b>	
Self-selected (Existing system)	Randomly-selected
Cleanliness/maintenance	Cleanliness/maintenance
Suggestions	Comfort
Comfort	Monetary Value
Content	Accessibility
Monetary Value	Content
Staff Interactions	Staff Interactions
General Quality	Crowdedness
Information Availability	
Crowdedness	
Accessibility	
Hours/Time	
Other	
Safety	

<b>Table 3: Comparison of the positive visitor experience categories mentioned by randomly-selected and self-selected visitors in July 2007</b>	
Self-selected (Existing system)	Randomly-selected
General Quality	General Quality
Staff Interactions	Other
	Staff Interactions
	Suggestions

The following summary provides a detailed description of the qualities of the comments made by visitors through our existing comment card system. It is important to note that these data cannot be sufficiently quantified as to allow us to extrapolate to percentages that might reflect the prevalence of these concerns for the larger museum visitor population. Visitor comment cards are derived from a self-selected sample, which the findings above demonstrated tend to be more negative than those made by a random sample. These data do, however, provide us with an indication of how our most aggravated visitors feel about our institution. As demonstrated through the comparison above, while the frequency of the concern is not the same in a self-selected versus a random sample, the content of the concerns will be similar. Paying attention to such comments, therefore, could potentially reduce the amount of frustration visitors feel towards the museum about their experience.

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**2. Areas that appear to be of greatest concern to visitors are cleanliness and maintenance, monetary value, and information availability, amongst others.**

A review of comments made by visitors using our existing comment card system reveals that two large areas of visitor concern are cleanliness/maintenance (112 comments, 20% of negative comments) and monetary value (84 comments, 15% of negative comments). These two areas are noteworthy not just for the number of negative comments made about each area, but also because of the strong, negative sentiments that are often expressed about the Museum through such comments. Other areas of concern mentioned by visitors include suggestions (58 comments, 10% of negative comments), information availability (53, 9%), staff interactions (46, 8%), crowdedness (46, 8%), general quality (43, 8%), and content (40, 7%).

**Cleanliness and maintenance**

Cleanliness and maintenance consistently appears as an area of visitor concern and is a source of frustration for many visitors. Comments related to cleanliness and maintenance discussed museum areas such as exhibits (46 of 112 negative cleanliness/maintenance comments), restrooms (35 comments), and the museum as a whole (16 comments). Example negative cleanliness/maintenance comments include the following:

*Restrooms were very dirty. Exhibits were very dated. Overall dated. (October 1-15, 2006)*

*As a native Bostonian, I was ashamed at the lack of cleanliness of the MOS. Display cases & exhibits had not been cleaned in a while and handrails were sticky... I would even volunteer to clean if necessary. I was truly ashamed of a great museum.(January 1-15, 2007)*

*Many exhibits in children hands-on area have not worked for months...If they are not fixed in a month or two, when we come back, I will not renew the membership. (March 16-31, 2007)*

*Bathrooms were dirty, unkempt and awful. Totally awful waste of my time. I would never recommend this Museum to anyone. (August 1-15, 2006)*

*The bathrooms were not tended to and with that size crowd you need constant monitoring. We had considered becoming members, but after our experience, we will not only not become members, we will not return for anything. So sorry. (December 16-31, 2006)*

*FIX the exhibits you have. There is no excuse to have exhibits that simply don't work. WORSE are the exhibits that appear to be working but aren't really, and they end up giving misinformation...(January 1-15, 2007)*

The high number of comments related to cleanliness/maintenance is not surprising. Prior MoS visitor research found that maintenance of exhibits is a top concern for visitors. The 2007 Pricing Study that surveyed over 800 people from the greater Boston area identified exhibits looking old/broken as the most frequently cited negative experience for visitors to the Museum of Science (RKM Research and Communications, 2007). Additionally, results from the 2005 Visitor Study also found that “too many exhibits broken/not working” was one of the top three ways visitors felt that the Museum did not meet their expectations (Opinion Dynamics Corporation, 2006).

While it is not surprising to find that cleanliness/maintenance is a concern for visitors, what was unexpected was the relationship between the cleanliness of the museum and the maintenance of the exhibits. The Museum generally separates “cleaning” from “maintenance”, but many comments list both of these concerns together, suggesting that they might be linked for visitors.

Another surprising result was the number of comments that pertained just to the cleanliness of the restrooms. The 2005 Visitor Study found that 74% of the visitors rated the cleanliness of the restrooms as either Excellent or Very Good. The large number of comments related to restroom cleanliness in the comment card data could be a result of the selection bias of the sampling method, or could reflect changes in the condition of the Museum over time. It is worth noting that there were more comments made about the cleanliness of the restrooms between July 1, 2006 and January 15, 2007 than were made from January 15 through June 30, 2007 (30 of 516 comments during *Body Worlds 2* as compared to 4 of 279 comments post-*Body Worlds 2*). This suggests that restroom cleanliness may be more of an issue during peak visitation.

### **Monetary value**

Some visitor comments stated that the Museum was overpriced for the experience. Key areas of the museum that were referred to in comments related to monetary value include the museum overall (28 of the 84 negative comments about monetary value), food services (16 comments), special exhibitions (14 comments), non-special exhibition paid add-ons (9 comments), and gift shop (8 comments). Visitor concern regarding monetary value is evidenced in the following quotes:

*I would not recommend anyone to visit. The Museum is so overpriced and outdated. It cost me over \$100 to get in with my family and park to see the same things I saw when I was a kid! (August 1-15, 2006)*

*We love the MOS, but does admission have to be so expensive?! We (Mass. residents) would visit more often and be more apt to spend money in the gift shop and cafe if we hadn't spent so much on admission...(August 16-31, 2006)*

*...With food and parking and tickets and a purchase in the store, it was a \$200 day for 2 adults and a child and not nearly worth it...(December 16-31, 2006)*

*Your Butterfly exhibit is a rip-off. There is a much better one at the Franklin Park Zoo and it is free. (July 1-15, 2006)*

Many of the comments related to monetary value address both the cost and the quality of the experience, suggesting that whether the experience was a good value was not just a function of how much it cost, but also whether the cost was worth it given the quality of the experience that was offered. Examining the difference between comments made about monetary value during and after *Body Worlds 2* raises some interesting questions regarding the relationship between the cost of the experience and the quality of the offering. There were more negative comments concerning the monetary value of the Museum during the run of *Body Worlds 2* (62 of 516) than after the run of *Body Worlds 2* (15 of 279). Many of the comments made about the monetary value of the Museum during the run of *Body Worlds 2* did not concern the cost of the special exhibition, but were directed towards frustration with the cost of the whole experience (exhibition, parking, gift shop, food, etc.).

Whether there was an increase in the concern over cost *Body Worlds 2* is difficult to determine through this data (again, because it is not a representative sample). However, the increase in negative comments related to monetary value does raise some interesting questions: Is there a ceiling price point for the overall museum experience (total for exhibit halls + *Body Worlds 2* + food + parking + gift shop, etc.) that, once reached, leads to increased visitor dissatisfaction with their experience?; and Does the perceived value of the Museum change depending upon the conditions under which visitors visit the Museum (for example, do more crowds and unclean restrooms decrease the monetary value of the Museum for visitors)? Results from the 2007 Pricing Study suggested that there is a cut-off point at which the Museum is no longer considered to be a good value, which suggests that the increase in comments related to monetary quality may be related to the increase in the overall cost of a museum visit during this time period. The comments also show, however, that price is not the only consideration and that the quality of the experience is also a factor in determining whether the Museum is a good value. This is an area that warrants further investigation.

### **Suggestions**

The 58 negative comments that appear in the category of suggestions tend to focus on one of two areas: offerings or services visitors would like the museum acquire (such as a specific exhibit or program) and requests for food services (30 comments), including recycling (17 comments). The following is a list of the range of comments that fall under the heading of “suggestions”:

*We want the virtual volleyball to come back. (September 1-15, 2006)*

*Suggests there be a day or a few hours where the Museum is available for senior citizens only. (July 1-15, 2007)*

*I think for the Omni Theater, you should play something on Rome, Italy. There's so much history. (July 16-31, 2007)*

*I would like to see recycling in the Cafe and maybe an exhibit about trash, global warming/recycling, etc. (June 16-30, 2007)*

*Why doesn't the Museum make an attempt to recycle??? It's disgusting to see all the plastics being thrown in the trash. (April 16-30, 2007)*

### **Information availability**

Information availability also appears to be an important concern for visitors, with 53 negative comments made about the difficulty Museum visitors had obtaining the correct information when and where they needed it. Main museum areas addressed under this concern include Publications/Web site (14 comments), the Museum (9 comments), and Tickets/Information desk (9 comments). Example comments that fell under the category of information availability include the following:

*I recently went to the museum and bought a coffee... I then went up to the exhibit and was told that I cannot go in with a drink. If this is the case, why even offer items that cannot be brought into the museum... at the VERY least put up a BIG sign that says NO FOOD IN EXHIBITS. The attendant said that there are signs, but after looking for them, they were small and somewhat hidden. I feel that this is unfair and improper treatment of customers. I have no problem with the fact that you cannot bring anything into the exhibit, but make it well known. I am asking the museum to reimburse my \$3 for the coffee that I ordered at the museum cafe. Please contact me asap. (January 1-15, 2007)*

*I did not come to the museum. I have some questions and called, but all I could get was a recording and my questions were not answered by this website or said recording. I think it's pretty pathetic that you can't have someone answer the phone. (May 16-June 15, 2007)*

*I would consider making the "Museum Hours" on the website more distinct from the "Museum store hours" because when you are in a hurry, your eyes go straight to the numbers, and I was confused. So, I ended up thinking you were open until 7:30. Thanks. (March 1-15, 2007)*

*Positive psychology - Science of Happiness. Website down and phone lines busy all day. Couldn't reserve in advance. No tickets available and no overflow venue. When the reservations website is down and phones continuously busy, it's fairly safe to assume overflow venues needed. There are far too few adult things anyway, and all do not appeal to everyone. (October 1-15, 2006)*

*We drove 3 hours with our 3 children to see Body Worlds. We were told we can stay as long as we want as we walked in and were kicked out after one hour! This is a disgrace to your Museum. Shame on you! We asked for re-entry tomorrow and were told "sorry!" Buy another ticket, but we are all sold out! Sorry. We should have gone to the movies. For \$8 each, we could have seen a movie of Body Worlds!! If you are going to keep it open, do so for 2 hours so we can see the exhibit. Don't take*

*our money (you really made out on us) and then say you need to leave after 1 hour. Be honest. I was told there was small print we close at 11:00 p.m. We were told we can stay at entrance! We were at Security counter with a group of other (unrelated people) with same complaint. A disappointed family from Vermont. UGH! (December 16-31, 2006)*

Findings from Molly Hood's 1992 research on infrequent and non-visitors highlighted the need for museums to reconsider how they deliver information to visitors. She found that visitors who were not experienced museum goers often had difficulty finding their way around museum offerings and determining what it is they can and cannot do in the museum.

Despite the importance of this area of concern, the museum has not regularly monitored or studied whether visitors felt they were receiving the correct information when and where they needed it. Previous studies have looked at the effectiveness of specific avenues of communication, but none have examined communication across the museum as a whole. One study that examined the visitor's ability to locate the information was a usability study that was conducted on the Museum's former Web site (the one that was in place prior to January 15, 2007) (Hass & Goff, 2005). This study found that the site was not effective at providing users with easy to locate information about the museum offerings as the site had been arranged around museum departments and not visitor interests (the new Web site, which was launched during the time period of this study, reflects changes that were based on this usability study). The 2005 Visitor Study also asked visitors to rate the Museum staff with regards to providing timely and accurate information about the museum and its offerings, 85% of whom rated the staff as Excellent/Very Good. Future studies should further explore whether the Museum is meeting visitors' overall information needs (particularly those visitors who are infrequent museum goers) and how we could improve our communication across platforms. As is demonstrated in the comments listed above, comments made about information availability cut across museum departments, suggesting that this is an area where multiple departments may need to work together.

### **Staff interactions**

In total, there were 46 negative comments made by visitors concerning staff/visitor interactions. These comments tended to relate to either 1) the lack of staff available to assist visitors, or 2) the rudeness of staff. Listed below are some example visitor comments from this category.

*Staff was not polite in Body Worlds 2 exhibit. Very rude and disrespectful. Should not be working for the public. (October 16-31, 2006)*

*...We thought there was a lack of employees to help with the crowd and the ones we encountered were rude and not helpful at all...(December 16-31, 2006)*

*Maybe we weren't in all the right sections, but I expected to see more staff in the exhibit halls. We had our 3 1/2 year old with us and a little guidance or interaction would have been welcomed. We saw staff at the front area where we had to show our tickets and that was it...(February 1-15, 2007)*

*You have a great establishment, however, we were very disappointed in the staff. When we arrived, the first interaction with Museum employees was at the ticket booth. Very unwelcoming, unsmiling and unhelpful as to what options were available to us. Not what you want when you first walk in. We saw no staff on any of the floors to answer questions or offer guidance other than one at the info. booth. When asked where the Mugar theater was I got a finger pointing me in the direction. (May 16-June 15, 2007)*

Despite the large number of negative comments made about Museum staff members, there were also a number of positive comments as well. This split response regarding staff interactions is echoed in the 2007 Pricing Study, which found that staff interactions were listed highly for both the visitors' most positive and negative experience. The split nature of this response suggests the need to further investigate the reasons behind negative responses (including possible inconsistencies in the quality of staff interactions) before recommendations can be made about whether and/or how this area could be improved.

### **Crowdedness**

Crowdedness was frequently listed amongst negative visitor comments, accounting for 8% of the negative visitor comments (46 comments overall). By far, the museum area that was most frequently associated with crowdedness was Special Exhibits (28 comments), followed by Parking (7 comments). Example comments about crowdedness include the following:

*I brought several people with me for the showing of Body Worlds for the 6:45 showing. I was extremely disappointed in the lack of any organized viewing. It was extremely crowded, people were rude, it was very warm and one couldn't see the entire exhibit. It seemed to me that since I had a scheduled time to view the exhibit, it would have been organized. Very disappointed. (January 1-15, 2007)*

*I am sorry to say that due to the large crowd of people, my friend and I were not able to view the World of Bodys the way we would have liked to. The mob of people crowded the display cases to the point that we could not see. The displays we were able to squeeze into to view, we were hurried along, I felt too many people were let in at one time. We saw very little, we paid extra for parking due to delays. We wish we could have viewed displays more... (September 1-15, 2007)*

*...At 3:00 we sat in our car for 40 minutes waiting to exit the garage. (December 16-31, 2006)*



While crowdedness ranked high in terms of the frequency of negative visitor comments, it was not consistently an issue throughout the year. In fact, almost all of the negative visitor comments concerning crowdedness were made during the run of *Body Worlds 2* (42 of the 46 comments). Crowdedness, not surprisingly, appears to be a conditional complaint whose occurrence depends upon the number of people in the building. The fact that crowdedness is not always a complaint does not mean that this is a visitor concern that can be ignored; the very nature of the complaint means that it occurs at times when large numbers of people are visiting the Museum. In the 2007 Pricing Study, crowds/long waits was the second most frequently cited negative experience visitors had at the Museum of Science, and again “too crowded” was the second most often way visitors said their experience differed from what was expected in the 2005 Visitor Study.

### **General Quality**

There were a number of negative comments (43) that directly related to the general quality of the Museum’s offerings. Many (18 comments) focused on the quality of the Museum’s food services, while others addressed the quality of the museum overall (6 comments), parking (6 comments), and the additional cost experiences (5 comments). Example comments include the following.

*..Since we did spend the entire day open to close at the Museum, we did also eat at the Museum cafe. We dined around 2 PM and were disappointed with the quality versus the advertisements. Your cafe is obviously cafeteria style, but that is in my opinion, conflicting with your advertisements. You advertise gourmet food from reputable names/vendors, but with the exception of the Starbucks label, I don't feel any value was delivered with your food products. I believe that cafeteria style service during peak dining periods would be most appropriate. I do not feel that is the case after the rush. I think that once the busy period of lunch visitors is over, the food should be cooked to order in order to live up to your advertisements...(May 1-15, 2007)*

*Great museum, but I was very disappointed with the lightning, optical illusion, supernova and titanic presentations because they appeared to be 80% lecture and 20% presentation. Very boring for kids. For example, the eagerly awaited supernova show was proceeded by 20 minutes of being subjected to the presenter showing off his knowledge of constellations. This had nothing to do with the show that we paid for. (November 16-15, 2006)*

*...While the pricing for the food was not outrageous, the quality was abhorrent. My son had a cheeseburger that was lukewarm (at best) and I had a hot dog that was too cold to consume. The french fries were tepid but edible...(July 16-31, 2007)*

*A wonderful day at the museum was really ruined for me by a very annoying experience at the parking kiosks. Then, barely helpful experience at the box office. The automated parking kiosk wouldn't accept my membership card for the discount...(April 1-15, 2007)*

## **Content**

One final area of concern for visitors was the content of the museum offerings (40 comments). Comments listing content-related concerns tended to focus on experiences visitors had where the content was different from what they expected based on how our offerings were advertised or on the visitors' notions of the goals and focus of the Museum of Science. Example comments include the following:

*We went to see "Hurricane on the Bayou". We were VERY, VERY, disappointed. We rarely saw any 'bayou' footage, I felt like I paid for a fundraiser. FYI: There are no trout in the bayou as pictured in the poster for the movie. The ad for the movie misled us. We thought we would see some SCIENCE orientated info on the Bayou. Instead, we heard about the life of a 10 year old and lots of footage that I had already seen on the news. I also heard about how they wanted to save the eroding wetlands, yet they were racing boats through it which is VERY bad for the erosion of the wetlands. We decided to go again at the end of our visit and saw Galapagos which was much more what we expected. (January 15-31, 2007)*

*Your new website is awful. Old look, all text based, not graphic based. Pages so similar you can't tell where you are. Deadend links, no interaction - like polls, feedback, quizzes, etc. Aren't you suppose to be a museum of science and technology? Was a 60 year old the chief designer? Great museum, pitiful site. (February 1-15, 2007)*

*I'm writing because although my daughter loved playing the DNA combining computer game, I was surprised how one side the information was on the panel above the rotten tomato game. The panel above the virus one was more balanced in that it asked you to think of the ethical questions. The one above the rotten tomato one basically defines anything as natural that survives DNA recombination because if it wasn't natural than it couldn't survive. Therefore, any food with recombinant DNA would be considered natural. Although I'm sure that exhibit is funded by the biotech industry, I still expect more from the Museum of Science in terms of balance. (May 16-June 15, 2007)*

*Might want to warn folks of graphic dolphin footage (i.e., dolphins caught in net). My 8 year old lost it when he saw that! (July 16-31, 2007)*

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### **3. Areas where there were few negative comments included comfort, hours/time of the institution, accessibility and safety.**

While the presence of negative comments can alert the Museum to areas where it may need to improve its efforts, the lack of negative comments about certain concerns can be an indicator of what it is that the Museum is doing well. There were four areas of visitor concern that appeared in the negative comments, but at a pretty infrequent rate.

These concerns included comfort, hours/time, accessibility (for all visitors, including those with and without disabilities), and safety.

Even though there were few negative comments about it, one area that may need further investigation is comfort. In total, there were 33 negative comments made about the comfort of the institution, and 27 of those 33 comments appeared during the run of *Body Worlds 2*. This suggests that the Museum may be a relatively comfortable environment for visitors, except during times of peak visitation. Example comments related to comfort include the following:

*...My only complaint -- way too hot and we were dehydrated and needed water after. Machines were sold out. (January 1-15, 2007)*

*Second time for exhibit here. Very unhappy with visit. Many children here from schools. Noisy in exhibits and difficult to get to view exhibits. Omni somewhat better, but still people talking and laughing. (November 16-December 15, 2006)*

*Too hot in Body exhibit room! Ugh! Can you put on the AC!?!???*  
*(October 16-31, 2006)*

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#### ***4. Areas of greatest praise are the general quality of the museum experience and staff interactions.***

Although most of the visitor comments are negative, some are positive (22%). These positive comments provide us with an indication of the areas/practices of the museum that visitors find to be praiseworthy. Unlike the negative comments, only a subset of the visitor experience categories received positive visitor comments and of that subset, two categories account for over 90% of the positive comments made by visitors. These two categories are general quality (117 comments, or 68% of the positive comments) and staff interactions (40 comments, or 23% of the positive comments). The remaining five categories received fewer than 10 comments each: content, other, accessibility, monetary value, accessibility and cleanliness.

#### **General Quality**

While visitors are specific about their complaints, their praise generally reflects their feelings about their overall experience. The following are examples of visitor comments that were made about the general quality of their museum experience:

*I brought 90 students and adults to the museum last Wednesday and we had one of the most effective field trips ever! Each child visited 9 exhibits and was able to explore and just have fun while they learned. Thank you! (November 15-December 16, 2006)*

*My family and I visited the MOS for the 1st time in many yrs on Oct. 1st. The Body Works 2 & 3 pm Omni show is all we saw. We loved both of them!...(We just obtained our 1st membership yesterday)...(October 1-15, 2006)*

*Overall, our experience was great. We enjoyed the exhibit on childbirth and loved the dinosaurs! The show at the Mugar Omni Theater was excellent. We saw the show Grand Canyon. That is definitely a must see! (May 1-15, 2007)*

This positive feeling about the Museum overall is echoed in findings from previous studies. The 2005 Visitor Study found that 86% of the visitors surveyed reported that the Museum met or exceeded their expectations, 96% said they would recommend the Museum to their family and friends (60% definitely, 36% most likely), and 81% said they would return in the next 12 months (43% definitely, 38% most likely). The 2007 Pricing Study similarly found that 82% of visitors were either completely or very satisfied with their visit.

### **Staff interactions**

When providing positive feedback about their interactions with staff, visitors are more specific, sometimes listing exact names and why the experience was a positive one.

*... Security Guard Jake was so helpful in guiding me through the exhibit...over the top hospitality. Thanks. (September 1-15, 2006)*

*I came to the Museum late for the 12PM Omni show and Yelissa was nice enough to show me my seat and it was a great experience and show. (November 15-December 16, 2006)*

*Incredibly good day. The staff were terrific and helpful, particularly the Cafe staff and cashier. (April 16-30, 2007)*

*...Moreover, the upbeat, assured, expedient, friendly and caring help from all Museum staff members is a comforting thought in a world where not everything is as dependable as the folks that run and care for the Museum. Thank you. (March 16-31, 2007)*

This finding, that visitors have positive interactions with Museum of Science staff, is echoed again in findings from the 2005 Visitor Study where over 85% of the visitors rated Museum staff either Very Good or Excellent with regards to their courteousness, responsiveness to visitor needs, and delivery of information.

While a large number of positive comments addressed positive experiences visitors had while interacting with staff, it is worth reminding the reader that not all comments related to staff interactions were positive. An almost equal number of comments about staff interactions expressed a negative attitude (46 comments) as expressed a positive attitude (40 comments). This finding is similar to that of the pricing study, where staff interactions ranked highly in terms of visitor descriptions of both their positive and negative experiences at the Museum.

**5. Comparisons between comments left during and after *Body Worlds 2* suggest that there may be differences in the quality of the visitor experience during times of peak visitation.**

Due to the nature of the sampling technique employed to gather visitor comments (which results in frequencies that are not representative of the broader population), statistical comparisons between comments left during and after *Body Worlds 2* cannot be made. Qualitative comparisons of the comments made by visitors during these two time periods do provide us, however, with an indication of where potential differences may exist, thus identifying areas for investigation in the future.

Table 4 provides a list of areas where there are large differences in the number and percentage of comments made by visitors during *Body Worlds 2* as compared to after *Body Worlds 2*. As one would expect (given the large numbers of visitors who attended the exhibition), there were more negative comments made by visitors about the crowdedness and comfort of the museum during *Body Worlds 2* than there were after *Body Worlds 2*. The monetary value of the Museum is another area where we see more negative comments from visitors during the run of *Body Worlds 2* as compared to time period directly after. There are also categories where we see a *lower* number of negative comments made about certain aspects of the Museum during *Body Worlds 2* as compared to after *Body Worlds 2*. These areas include general quality, staff interactions, and suggestions.

Visitor experience category	During <i>Body Worlds 2</i>	After <i>Body Worlds 2</i>
Crowdedness	11%	2%
Monetary Value	17%	10%
Cleanliness/Maintenance	16%	11%
Comfort	7%	3%
General Quality	6%	11%
Staff Interactions	6%	13%
Suggestions	8%	15%

What is behind these differences is difficult to determine, especially given the non-representativeness of the sample. Cross-tabulating the visitor experience categories with the museum area categories does, however, provide some indications of what may be behind these differences, as does the content of the visitor comments.

*Crowdedness*: Most of the negative comments made during *Body Worlds 2* about crowdedness pertained to the special exhibition (28 of 42 comments).

*Comfort:* Most of the negative visitor comments made about the comfort of the Museum appeared during *Body Worlds 2* time period. This suggests that the Museum may present itself as a comfortable environment for visitors, except during times of peak visitation. While some degree of decreased comfort is to be expected during times of peak visitation, the lack of visitor comforts during times of peak visitation should not be taken lightly. Molly Hood's (1992) research documents the link between infrequent visitors feeling comfortable and their motivation to return. This suggests that finding ways to increase the Museum's comfort during times of peak visitation is important, especially given the fact that this is one of the only experiences infrequent museum visitors may have with the Museum over a significant span of time.

*Monetary value:* Many of the comments made about the monetary value of the Museum during the *Body Worlds 2* time period did not address the cost of the special exhibition, but were directed towards frustration with the cost of the whole experience (exhibition, parking, gift shop, food, etc.). This suggests that potential differences in the perceived monetary value of the overall experience could be attributed to the increase in the overall cost of the experience for the day, or decreases in the quality of the overall experience (based on other changes such as the cleanliness of the restrooms or the crowdedness of the gallery).

*Cleanliness/maintenance:* There were many more comments made about the cleanliness of the restrooms during the run of *Body Worlds 2* than were made after *Body Worlds 2* (31 of 517 comments during *Body Worlds 2* as compared to 4 of 280 comments post-*Body Worlds 2*). This suggests that cleanliness of the restrooms may be the main reason for the differences between these two time periods.

*General quality:* There is relatively little difference in the raw number of negative comments made about general quality between the *Body Worlds 2* and post-*Body Worlds 2* time periods. It is the difference in the total number of comments made during the two time periods that accounts for most of the variation in percentage (only 280 comments were made post *Body Worlds 2*, while 517 were made during *Body Worlds 2*). It is worth noting that the presence of *Body Worlds 2* itself may have also had a positive effect on visitor perceptions of the quality of the Museum experience. While the number of positive comments made about the Museum overall stayed relatively the same during *Body Worlds 2* (23 comments) as compared to post-*Body Worlds 2* (29 comments), there were an additional 18 positive comments made about the quality of Special Exhibits during *Body Worlds 2*.

*Staff interactions and suggestions:* As with general quality, there is relatively little difference in the raw number of negative comments made about these two experience categories between the *Body Worlds 2* and post-*Body Worlds 2* time periods. It is the difference in the total number of comments made during the two time periods that accounts for most of the variation in the percentage of comments made.

## IV. CONCLUSION

Analysis of comments made by visitors through the existing comment card system during the time period of August 2006 through July 2007 identified a number of areas that appear to be of greatest concern to visitors. These areas include the following:

- Cleanliness/maintenance;
- Monetary value;
- Information availability;
- Staff interactions;
- General quality;
- Crowdedness; and
- Content.

This analysis also revealed areas worthy of visitor praise (based on the low number of negative comments and a high number of positive comments), some of which overlap with the areas of concern (meaning they received large numbers of both positive and negative comments). These include the following:

- General quality;
- Staff interactions;
- Accessibility;
- Comfort;
- Hours/time; and
- Safety.

Comparison of comments made by visitors in July 2007 through our existing comment card system to comments made by visitors who were randomly selected to complete a comment card reveal that the comments made by visitors through the existing system are more negative than those made by randomly selected visitors. This suggests that the existing comment card system is not a good predictor of the overall feelings of the majority of visitors.

Based on these findings, there are a number of recommendations for moving forward:

- *The Museum should find ways for departments to work together to improve two areas of visitor concern: cleanliness/maintenance and information availability. Both of these concerns featured prominently in the August 2006 through July 2007 comment cards and were identified by Molly Hood as elements that contributed to the “comfort and care” of museum visitors and the willingness of infrequent visitors to attend a museum and then return to it. These concerns also appeared to cut across various departments within the Museum, and are not the responsibility of just one department alone. To improve information availability, departments will need to work together as visitors do not often disassociate one avenue for receiving information from another.*

- *More investigation is required to examine the link between the perceived monetary value of the institution and the conditions under which visitors visit the Museum.* Findings from this study suggest that there may have been a difference between visitors' perceptions of the monetary value of the Museum between the time period when *Body Worlds 2* was exhibited at the Museum and the time period immediately afterwards. Future visitor research should explore whether it is the case that conditions such as those that were present during the run of *Body Worlds 2* (where there was an increase in the cost of admission and/or changes in the comfort and cleanliness of the museum) change visitors' conceptions of the monetary value of the institution, and if so, which conditions matter the most.
- *Further exploration should examine the overall quality of the interactions our visitors have with Museum staff members.* The large number of positive comments made about visitors' interactions with staff suggests that the Museum is justifiably proud of the guest service experience staff members offer visitors. On the other hand, the equally large number of negative comments suggests that not all visitors have positive interactions with staff members. At this point in time, we do not have a clear picture of the consistency in the overall quality of interactions visitors have with Museum staff members and the impact those interactions have on visitors' perception of the quality of the Museum and their willingness to return. This is an area that warrants further investigation.
- *To better monitor how conditions in the Museum impact visitors' perceptions of the overall quality of their experience and their subsequent willingness to return or recommend the Museum to others, we need to develop a system different from the current comment card system.* Comparison of comments that were actively solicited from visitors through random-sampling to comments left through our traditional comment card system found that the comments made by visitors tended to be much more negative in the existing system than they would be through random sampling. While the existing comment cards can be useful for monitoring the concerns of the most aggravated visitors, they are not effective at measuring changes over time and under different conditions. If the Museum wishes to identify the strategic areas where they should allocate more resources to create greater visitor satisfaction and loyalty, it should employ a more systematic way of collecting and analyzing visitor feedback.



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**APPENDIX A: SUMMARY OF COMMENT CODING SYSTEM**

<b>Visitor Experience Category</b>	<b>Description of Category</b>	<b>Example 1</b>	<b>Example 2</b>
Accessibility	Includes all comments related to the accessibility of the museum for people with disabilities, families with small children, and all other guests	"...There were a few exhibits that were difficult for smaller people to see without being picked up. There were not enough stools or stepping equipment that would allow everyone to see the exhibits the same way."	"Braille outside restrooms would be helpful."
Cleanliness/Maintenance	Includes all comments that have to do with cleanliness of the museum, maintenance, and state of performance for the exhibits	"Could be great place, but 50% of stuff was defective or broken."	"Why can't I find this URL? <a href="http://www.mos.org/cst-archive/article/80/9.html">http://www.mos.org/cst-archive/article/80/9.html</a> "
Comfort	Includes all comments related to the comfort of the guests, such as temperature of the museum, noise level, and visitor interactions (pushing, spitting, etc.)	"Make the seats inside the Planetarium lean back more. This will make it easier on the neck!"	"Was in the Wright Theater to listen to a lecture by Andrew Rifkin on North Pole. There was a terrible pounding, pulsing, constant background noise in the theater throughout the lecture. Not only was it hard to concentrate on the lecture, but I found I had a pounding headache on exiting. I will not attend another lecture that is listed as being held in the Wright Theater."

<b>Visitor Experience Category</b>	<b>Description of Category</b>	<b>Example 1</b>	<b>Example 2</b>
Content	Includes all comments concerning the content of a certain aspect of the museum (such as the discovery center, museum gift store, or human body exhibit); also includes comments regarding ease of use or specific characteristics such as whether or not an exhibit is age appropriate or interactive	"The museum store has several Darwin biographies, but I did not find any of Darwin's actual writings -- e.g. The Origin of Species or The Descent of Man..."	"...We saw the Omni film The Human Body" and were very disturbed by the propaganda in the film. The fetus was referred to as the baby; and the 9 months of pregnancy were called the "first nine months of the life of the baby." Is your goal to tell the truth or to make the "Right to Life" people happy?"
Crowdedness	Includes all comments regarding the amount of people in the museum (or a certain part of the museum) or the length of waiting time (for food sales, special exhibits, entrance into the museum, parking, etc.)	"Please have a separate coffee/tea line besides Starbucks because many children are waiting for ice cream. I need my cup of tea to keep going! Thanks."	"...Only disappointments were the overcrowding in the Bodyworks 2 exhibit. Way too many people at once! ..."
General Quality	Includes all comments that voice opinions about the visitor experience as a whole, different aspects of the museum (such as the quality of food, or the quality of a planetarium experience), or the educational value of the museum as a whole.	"We took our 5th graders to your museum yesterday. It was a wonderful experience for all of the kids. Thank you so much. "	"I just tried the LoMein Special. I like salty food, but this food was way too salty. I couldn't eat it."

<b>Visitor Experience Category</b>	<b>Description of Category</b>	<b>Example 1</b>	<b>Example 2</b>
Hours/Time	Includes all comments about hours of operation, frequency of shows and cancellations	"It is OUTRAGEOUS that you close the Food court areas so early on Friday nights when there are still families looking to eat dinner! What is wrong with you people?"	"When I take my 8th grade here, they can't see the Planetarium and Omni because of times. Can something be done so they have a total MOS experience?"
Information Availability	Includes all comments regarding finding or navigating the museum, or finding information about the museum, such as hours, rates, or info about films and exhibits (including instructions and labels)	"Please place film length times back on website. Very helpful for planning visits."	"We arrived in the afternoon and there were no more schedules for the day. We went to the main information booth to find out what was going on..."
Monetary Value	Includes all comments that have to do with money spent at the museum or the monetary value of the museum experience (in part or as a whole)	"Everything was great except the parking charge. \$35 is ridiculous. I would not have gone if I knew of this charge."	"I found the food in the Cafe to be rather overpriced..."
Other	Includes all comments that do not fit into the other categories, such as comments about lost and found, specific questions or requests, etc.	"Wrote down the philosopher who is quoted in the beginning of Body Worlds 2 about death... If death takes away then it is not death or something like that. It's on a large screen near the skulls...I can't find my notes...PLEASE could someone send it to me. Philosopher was very ancient pre 4AD or such. Thank you."	"During our visit, we saw a display of old 8-track tapes. I have an AM-FM radio with a built-in 8-track player which is still in working order. Would you like it as a donation to your exhibit?"

<b>Visitor Experience Category</b>	<b>Description of Category</b>	<b>Example 1</b>	<b>Example 2</b>
Safety	Includes all comments that have to do with visitor safety at the museum	"To Wolfgang Puck - regarding volunteer lunch. One of the pastries contained peanuts or peanut butter and I had an allergic reaction. Please LABEL those or do not serve them. Fortunately, I had medication with me."	"Warning sign for epileptics at Electricity Theater regarding potential for seizures if in contact with electrical field."
Staff Interactions	Includes all comments that have to do with the quality and quickness of service that the visitors receive and the personal interactions that they have with staff members; includes all comments that discuss a lack of service or staff availability as well	"...Moreover, the upbeat, assured, expedient, friendly and caring help from all Museum staff members is a comforting thought in a world where not everything is as dependable as the folks that run and care for the Museum. Thank you."	"Staff very patient, kind and helpful in the Café..."
Suggestions	Includes all comments that suggest new ideas for the museum, such as new exhibits, new laser shows, etc.; also includes requests for recycling and an online store	"Where is the recycling in the Food Court??? Get with it!!"	"Laser Show recommend: Lincoln Park, Green Day."

<b>Attitude</b>	<b>Description of Attitude</b>	<b>Example 1</b>	<b>Example 2</b>
Positive	Includes all comments that compliment the museum or discuss positive aspects of the museum experience	"I've always loved the MOS. The Omni shows are fantastic and more. I recommended this place to a friend!"	"...Parking, however, was cheap for Boston."
Negative	Includes all comments that complain about the museum or talk about negative aspects of the museum experience; also includes any comments that suggest needed improvements or opportunities to increase visitor satisfaction	"Smaller portions for children on pasta and meatballs."	"Darwin was extremely hot. I'm still overheated."
Neutral	Includes all comments that have neither a positive nor negative tone, and do not point out aspects of the museum experience that need to improve/change; includes new ideas for exhibits, questions about the museum, etc.	"Do you have a MOO BELLA ice cream machine?"	"A sea monkey exhibit would be cool."

**APPENDIX B: FREQUENCY OF VISITOR COMMENTS BY EXPERIENCE CATEGORIES**

**Table B1: Visitor Concerns from August 2006 through July 2007**

	Negative	% Negative	Positive	% Positive	Neutral	% Neutral	Total	% Total
Accessibility	16	3%	2	1%	1	2%	19	2%
Cleanliness	112	20%	1	1%	1	2%	114	14%
Comfort	33	6%	0	0%	0	0%	33	4%
Content	40	7%	7	4%	1	2%	48	6%
Crowdedness	46	8%	0	0%	0	0%	46	6%
General Quality	43	8%	117	68%	3	6%	163	20%
Hours/Time	21	4%	0	0%	0	0%	21	3%
Information Availability	53	9%	0	0%	1	2%	54	7%
Monetary Value	84	15%	2	1%	0	0%	86	11%
Other	9	2%	3	2%	17	31%	29	4%
Safety	10	2%	0	0%	0	0%	10	1%
Staff Interactions	46	8%	40	23%	0	0%	86	11%
Suggestions	58	10%	0	0%	30	56%	88	11%
Total	571	72%	172	22%	54	7%	797	100%

<b>Table B2: Visitor Concerns from August 2006 through January 15, 2007 (Body Worlds 2)</b>								
	Negative	% Negative	Positive	% Positive	Neutral	% Neutral	Total	% Total
Accessibility	14	4%	1	1%	1	3%	16	3%
Cleanliness	82	21%	1	1%	1	3%	84	16%
Comfort	27	7%	0	0%	0	0%	27	5%
Content	27	7%	3	3%	0	0%	30	6%
Crowdedness	42	11%	0	0%	0	0%	42	8%
General Quality	24	6%	64	71%	2	6%	90	17%
Hours/Time	9	2%	0	0%	0	0%	9	2%
Information Availability	31	8%	0	0%	0	0%	31	6%
Monetary Value	67	17%	0	0%	0	0%	67	13%
Other	7	2%	2	2%	10	29%	19	4%
Safety	9	2%	0	0%	0	0%	9	2%
Staff Interactions	22	6%	19	21%	0	0%	41	8%
Suggestions	32	8%	0	0%	20	59%	52	10%
<b>Total</b>	<b>393</b>	<b>76%</b>	<b>90</b>	<b>17%</b>	<b>34</b>	<b>7%</b>	<b>517</b>	<b>100%</b>



**Table B3: Visitor Concerns from January, 16 2007 through July 31, 2007 (post *Body Worlds 2*)**

	Negative	% Negative	Positive	% Positive	Neutral	% Neutral	Total	% Total
Accessibility	2	1%	1	1%	0	0%	3	1%
Cleanliness	30	17%	0	0%	0	0%	30	11%
Comfort	6	3%	0	0%	0	0%	6	2%
Content	13	7%	4	5%	1	5%	18	6%
Crowdedness	4	2%	0	0%	0	0%	4	1%
General Quality	19	11%	53	65%	1	5%	73	26%
Hours/Time	12	7%	0	0%	0	0%	12	4%
Information Availability	22	12%	0	0%	1	5%	23	8%
Monetary Value	17	10%	2	2%	0	0%	19	7%
Other	2	1%	1	1%	7	35%	10	4%
Safety	1	1%	0	0%	0	0%	1	0%
Staff Interactions	24	13%	21	26%	0	0%	45	16%
Suggestions	26	15%	0	0%	10	50%	36	13%
<b>Total</b>	<b>178</b>	<b>64%</b>	<b>82</b>	<b>29%</b>	<b>20</b>	<b>7%</b>	<b>280</b>	<b>100%</b>

**APPENDIX C: FREQUENCY OF VISITOR COMMENTS BY MUSEUM AREA CATEGORIES**

**Table C1: Visitor Comments from August 2006 through July 2007**

	Negative	% Negative	Positive	% Positive	Neutral	% Neutral	Total	% Total
Food Services	87	15%	7	4%	1	2%	95	12%
General Exhibits	83	15%	10	6%	11	20%	104	13%
Gift Shop	21	4%	3	2%	4	7%	28	4%
Membership	4	1%	0	0%	0	0%	4	1%
Museum	92	16%	67	39%	15	28%	174	22%
Non-Museum	1	0%	1	1%	0	0%	2	0%
Normal Programs	9	2%	10	6%	0	0%	19	2%
Other Programs	9	2%	17	10%	0	0%	26	3%
Paid Add-ons	53	9%	19	11%	12	22%	84	11%
Publications/Web site	26	5%	2	1%	4	7%	32	4%
Restrooms	44	8%	0	0%	0	0%	44	6%
Security/Parking	35	6%	4	2%	3	6%	42	5%
Special Exhibits	84	15%	26	15%	4	7%	114	14%
Tickets/Information	23	4%	6	3%	0	0%	29	4%
<b>Total</b>	<b>571</b>	<b>72%</b>	<b>172</b>	<b>22%</b>	<b>54</b>	<b>7%</b>	<b>797</b>	<b>100%</b>

<b>Table C2: Visitor Comments from August 2006 through January 15, 2007 (<i>Body Worlds 2</i>)</b>								
	Negative	% Negative	Positive	% Positive	Neutral	% Neutral	Total	% Total
Food Services	45	11%	4	4%	1	3%	50	10%
General Exhibits	56	14%	5	6%	5	15%	66	13%
Gift Shop	16	4%	2	2%	3	9%	21	4%
Membership	3	1%	0	0%	0	0%	3	1%
Museum	65	17%	29	32%	9	26%	103	20%
Non-Museum	0	0%	1	1%	0	0%	1	0%
Normal Programs	3	1%	7	8%	0	0%	10	2%
Other Programs	8	2%	7	8%	0	0%	15	3%
Paid Add-ons	33	8%	10	11%	8	24%	51	10%
Publications/Web site	10	3%	0	0%	2	6%	12	2%
Restrooms	40	10%	0	0%	0	0%	40	8%
Security/Parking	21	5%	3	3%	2	6%	26	5%
Special Exhibits	81	21%	19	21%	4	12%	104	20%
Tickets/Information	12	3%	3	3%	0	0%	15	3%
<b>Total</b>	<b>393</b>	<b>76%</b>	<b>90</b>	<b>17%</b>	<b>34</b>	<b>7%</b>	<b>517</b>	<b>100%</b>

**Table C3: Visitor Comments from January, 16 2007 through July 31, 2007 (post *Body Worlds 2*)**

	Negative	% Negative	Positive	% Positive	Neutral	% Neutral	Total	% Total
Food Services	42	24%	3	4%	0	0%	45	16%
General Exhibits	27	15%	5	6%	6	30%	38	14%
Gift Shop	5	3%	1	1%	1	5%	7	3%
Membership	1	1%	0	0%	0	0%	1	0%
Museum	27	15%	38	46%	6	30%	71	25%
Non-Museum	1	1%	0	0%	0	0%	1	0%
Normal Programs	6	3%	3	4%	0	0%	9	3%
Other Programs	1	1%	10	12%	0	0%	11	4%
Paid Add-ons	20	11%	9	11%	4	20%	33	12%
Publications/Web site	16	9%	2	2%	2	10%	20	7%
Restrooms	4	2%	0	0%	0	0%	4	1%
Security/Parking	14	8%	1	1%	1	5%	16	6%
Special Exhibits	3	2%	7	9%	0	0%	10	4%
Tickets/Information	11	6%	3	4%	0	0%	14	5%
<b>Total</b>	<b>178</b>	<b>100%</b>	<b>82</b>	<b>100%</b>	<b>20</b>	<b>100%</b>	<b>280</b>	<b>100%</b>

**APPENDIX D: FREQUENCY OF VISITOR COMMENTS BY VISITOR EXPERIENCE AND MUSEUM AREA CATEGORIES**

**Table D: Visitor Comments from August 2006 through July 2007**

	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Accessibility</b>	<b>2</b>	<b>16</b>	<b>1</b>	<b>19</b>	<b>2%</b>
Food Services	0	0	0	<b>0</b>	<b>0%</b>
General Exhibits	0	1	0	<b>1</b>	<b>0%</b>
Gift Shop	0	0	0	<b>0</b>	<b>0%</b>
Membership	0	0	0	<b>0</b>	<b>0%</b>
Museum	2	1	0	<b>3</b>	<b>0%</b>
Non-Museum	0	0	0	<b>0</b>	<b>0%</b>
Normal Programs	0	0	0	<b>0</b>	<b>0%</b>
Other Program	0	1	0	<b>1</b>	<b>0%</b>
Paid Add-ons	0	0	1	<b>1</b>	<b>0%</b>
Publications/Website	0	0	0	<b>0</b>	<b>0%</b>
Restrooms	0	5	0	<b>5</b>	<b>1%</b>
Security/Parking	0	2	0	<b>2</b>	<b>0%</b>
Special Exhibits	0	6	0	<b>6</b>	<b>1%</b>
Tickets/Information	0	0	0	<b>0</b>	<b>0%</b>
<b>Cleanliness</b>	<b>1</b>	<b>112</b>	<b>1</b>	<b>114</b>	<b>14%</b>
Food Services	0	4	0	<b>4</b>	<b>1%</b>
General Exhibits	0	46	0	<b>46</b>	<b>6%</b>
Gift Shop	0	0	0	<b>0</b>	<b>0%</b>
Membership	0	0	0	<b>0</b>	<b>0%</b>
Museum	1	14	1	<b>16</b>	<b>2%</b>
Non-Museum	0	0	0	<b>0</b>	<b>0%</b>
Normal Programs	0	1	0	<b>1</b>	<b>0%</b>
Other Program	0	0	0	<b>0</b>	<b>0%</b>
Paid Add-ons	0	2	0	<b>2</b>	<b>0%</b>
Publications/Website	0	4	0	<b>4</b>	<b>1%</b>
Restrooms	0	35	0	<b>35</b>	<b>4%</b>
Security/Parking	0	2	0	<b>2</b>	<b>0%</b>
Special Exhibits	0	4	0	<b>4</b>	<b>1%</b>
Tickets/Information	0	0	0	<b>0</b>	<b>0%</b>

	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Comfort</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>33</b>	<b>4%</b>
Food Services	0	0	0	0	0%
General Exhibits	0	6	0	6	1%
Gift Shop	0	0	0	0	0%
Membership	0	0	0	0	0%
Museum	0	6	0	6	1%
Non-Museum	0	0	0	0	0%
Normal Programs	0	1	0	1	0%
Other Program	0	1	0	1	0%
Paid Add-ons	0	10	0	10	1%
Publications/Website	0	0	0	0	0%
Restrooms	0	0	0	0	0%
Security/Parking	0	1	0	1	0%
Special Exhibits	0	8	0	8	1%
Tickets/Information	0	0	0	0	0%
<b>Content</b>	<b>7</b>	<b>40</b>	<b>1</b>	<b>48</b>	<b>6%</b>
Food Services	0	0	0	0	0%
General Exhibits	0	8	0	8	1%
Gift Shop	0	4	0	4	1%
Membership	0	0	0	0	0%
Museum	0	0	0	0	0%
Non-Museum	0	0	0	0	0%
Normal Programs	1	0	0	1	0%
Other Program	1	0	0	1	0%
Paid Add-ons	0	12	1	13	2%
Publications/Website	1	7	0	8	1%
Restrooms	0	0	0	0	0%
Security/Parking	0	0	0	0	0%
Special Exhibits	4	9	0	13	2%
Tickets/Information	0	0	0	0	0%

	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Crowdedness</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>46</b>	<b>6%</b>
Food Services	0	4	0	<b>4</b>	<b>1%</b>
General Exhibits	0	4	0	<b>4</b>	<b>1%</b>
Gift Shop	0	0	0	<b>0</b>	<b>0%</b>
Membership	0	0	0	<b>0</b>	<b>0%</b>
Museum	0	2	0	<b>2</b>	<b>0%</b>
Non-Museum	0	0	0	<b>0</b>	<b>0%</b>
Normal Programs	0	0	0	<b>0</b>	<b>0%</b>
Other Program	0	0	0	<b>0</b>	<b>0%</b>
Paid Add-ons	0	0	0	<b>0</b>	<b>0%</b>
Publications/Website	0	0	0	<b>0</b>	<b>0%</b>
Restrooms	0	0	0	<b>0</b>	<b>0%</b>
Security/Parking	0	7	0	<b>7</b>	<b>1%</b>
Special Exhibits	0	28	0	<b>28</b>	<b>4%</b>
Tickets/Information	0	1	0	<b>1</b>	<b>0%</b>
<b>General Quality</b>	<b>117</b>	<b>43</b>	<b>3</b>	<b>163</b>	<b>20%</b>
Food Services	5	18	0	<b>23</b>	<b>3%</b>
General Exhibits	5	2	0	<b>7</b>	<b>1%</b>
Gift Shop	2	0	0	<b>2</b>	<b>0%</b>
Membership	0	0	0	<b>0</b>	<b>0%</b>
Museum	52	6	2	<b>60</b>	<b>8%</b>
Non-Museum	0	0	0	<b>0</b>	<b>0%</b>
Normal Programs	4	0	0	<b>4</b>	<b>1%</b>
Other Program	13	2	0	<b>15</b>	<b>2%</b>
Paid Add-ons	13	5	0	<b>18</b>	<b>2%</b>
Publications/Website	1	1	0	<b>2</b>	<b>0%</b>
Restrooms	0	0	0	<b>0</b>	<b>0%</b>
Security/Parking	0	6	0	<b>6</b>	<b>1%</b>
Special Exhibits	22	3	1	<b>26</b>	<b>3%</b>
Tickets/Information	0	0	0	<b>0</b>	<b>0%</b>

	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Hours/Time</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>21</b>	<b>3%</b>
Food Services	0	6	0	<b>6</b>	<b>1%</b>
General Exhibits	0	1	0	<b>1</b>	<b>0%</b>
Gift Shop	0	1	0	<b>1</b>	<b>0%</b>
Membership	0	0	0	<b>0</b>	<b>0%</b>
Museum	0	6	0	<b>6</b>	<b>1%</b>
Non-Museum	0	0	0	<b>0</b>	<b>0%</b>
Normal Programs	0	3	0	<b>3</b>	<b>0%</b>
Other Program	0	0	0	<b>0</b>	<b>0%</b>
Paid Add-ons	0	4	0	<b>4</b>	<b>1%</b>
Publications/Website	0	0	0	<b>0</b>	<b>0%</b>
Restrooms	0	0	0	<b>0</b>	<b>0%</b>
Security/Parking	0	0	0	<b>0</b>	<b>0%</b>
Special Exhibits	0	0	0	<b>0</b>	<b>0%</b>
Tickets/Information	0	0	0	<b>0</b>	<b>0%</b>
<b>Info Availability</b>	<b>0</b>	<b>53</b>	<b>1</b>	<b>54</b>	<b>7%</b>
Food Services	0	2	0	<b>2</b>	<b>0%</b>
General Exhibits	0	2	0	<b>2</b>	<b>0%</b>
Gift Shop	0	1	0	<b>1</b>	<b>0%</b>
Membership	0	2	0	<b>2</b>	<b>0%</b>
Museum	0	9	0	<b>9</b>	<b>1%</b>
Non-Museum	0	1	0	<b>1</b>	<b>0%</b>
Normal Programs	0	0	0	<b>0</b>	<b>0%</b>
Other Program	0	4	0	<b>4</b>	<b>1%</b>
Paid Add-ons	0	1	0	<b>1</b>	<b>0%</b>
Publications/Website	0	14	1	<b>15</b>	<b>2%</b>
Restrooms	0	1	0	<b>1</b>	<b>0%</b>
Security/Parking	0	3	0	<b>3</b>	<b>0%</b>
Special Exhibits	0	4	0	<b>4</b>	<b>1%</b>
Tickets/Information	0	9	0	<b>9</b>	<b>1%</b>



	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Monetary Value</b>	<b>2</b>	<b>84</b>	<b>0</b>	<b>86</b>	<b>11%</b>
Food Services	0	16	0	16	2%
General Exhibits	0	2	0	2	0%
Gift Shop	0	8	0	8	1%
Membership	0	1	0	1	0%
Museum	1	27	0	28	4%
Non-Museum	0	0	0	0	0%
Normal Programs	0	0	0	0	0%
Other Program	0	1	0	1	0%
Paid Add-ons	0	9	0	9	1%
Publications/Website	0	0	0	0	0%
Restrooms	0	0	0	0	0%
Security/Parking	1	3	0	4	1%
Special Exhibits	0	14	0	14	2%
Tickets/Information	0	3	0	3	0%
<b>Other</b>	<b>3</b>	<b>9</b>	<b>17</b>	<b>29</b>	<b>4%</b>
Food Services	0	1	0	1	0%
General Exhibits	1	0	2	3	0%
Gift Shop	0	1	3	4	1%
Membership	0	0	0	0	0%
Museum	2	5	6	13	2%
Non-Museum	0	0	0	0	0%
Normal Programs	0	0	0	0	0%
Other Program	0	0	0	0	0%
Paid Add-ons	0	0	0	0	0%
Publications/Website	0	0	2	2	0%
Restrooms	0	0	0	0	0%
Security/Parking	0	0	2	2	0%
Special Exhibits	0	2	2	4	1%
Tickets/Information	0	0	0	0	0%

	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Safety</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>1%</b>
Food Services	0	1	0	1	0%
General Exhibits	0	0	0	0	0%
Gift Shop	0	0	0	0	0%
Membership	0	0	0	0	0%
Museum	0	3	0	3	0%
Non-Museum	0	0	0	0	0%
Normal Programs	0	1	0	1	0%
Other Program	0	0	0	0	0%
Paid Add-ons	0	1	0	1	0%
Publications/Website	0	0	0	0	0%
Restrooms	0	1	0	1	0%
Security/Parking	0	0	0	0	0%
Special Exhibits	0	3	0	3	0%
Tickets/Information	0	0	0	0	0%
<b>Staff Interactions</b>	<b>40</b>	<b>46</b>	<b>0</b>	<b>86</b>	<b>11%</b>
Food Services	2	5	0	7	1%
General Exhibits	4	4	0	8	1%
Gift Shop	1	1	0	2	0%
Membership	0	0	0	0	0%
Museum	9	9	0	18	2%
Non-Museum	1	0	0	1	0%
Normal Programs	5	3	0	8	1%
Other Program	3	0	0	3	0%
Paid Add-ons	6	5	0	11	1%
Publications/Website	0	0	0	0	0%
Restrooms	0	0	0	0	0%
Security/Parking	3	10	0	13	2%
Special Exhibits	0	3	0	3	0%
Tickets/Information	6	6	0	12	2%

	<b>Positive</b>	<b>Negative</b>	<b>Neutral</b>	<b>Total</b>	<b>% of Total</b>
<b>Suggestions</b>	<b>0</b>	<b>58</b>	<b>30</b>	<b>88</b>	<b>11%</b>
Food Services	0	30	1	<b>31</b>	<b>4%</b>
General Exhibits	0	7	9	<b>16</b>	<b>2%</b>
Gift Shop	0	5	1	<b>6</b>	<b>1%</b>
Membership	0	1	0	<b>1</b>	<b>0%</b>
Museum	0	4	6	<b>10</b>	<b>1%</b>
Non-Museum	0	0	0	<b>0</b>	<b>0%</b>
Normal Programs	0	0	0	<b>0</b>	<b>0%</b>
Other Program	0	0	0	<b>0</b>	<b>0%</b>
Paid Add-ons	0	4	10	<b>14</b>	<b>2%</b>
Publications/Website	0	0	1	<b>1</b>	<b>0%</b>
Restrooms	0	2	0	<b>2</b>	<b>0%</b>
Security/Parking	0	1	1	<b>2</b>	<b>0%</b>
Special Exhibits	0	0	1	<b>1</b>	<b>0%</b>
Tickets/Information	0	4	0	<b>4</b>	<b>1%</b>