MARKETING THE MUSEUM OF SCIENCE TO COLLEGE STUDENTS

An Interactive Qualifying Project Report
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Table of Contents

List of Figures

List of Tables

1 A bstract

The Museum of Science has a reputation as “a great place to bring the kids.” While the Museum desires to maintain this perception, they also aspire to increase the attendance of college students. In recent years, the Museum of Science has experienced a visible decrease in college student attendance. This project’s main focus is to investigate why this decrease in attendance came about and make recommendations for effective marketing to the college student demographic.

2 Executi ve Summary

The Museum of Science in Boston has always had the reputation of "a great place to bring the kids." The Museum staff appreciates that the family audience is essential to the success of the Museum but they also realize that targeting college students has the potential to provide benefits in the future. In recent years, the Museum of Science has experienced a visible decrease in the number of college students who attend the Museum. The purpose of this project is to provide the Museum staff with insight into the college population in Boston so that they can better understand why this decrease came about and how to resolve this problem.

Historically, Boston has been a center for Science and Technology. It is no surprise that, arguably the best science museum in the United States is located in Boston. In 1830, the Museum of Science in Boston was founded by a group of six men with the intention of establishing a society through which they could pursue common scientific interests. Over the last 170 years the Museum of Science has made it their mission to stimulate interest in, and further understanding of, science and technology and their importance for individuals and for society. The Museum's mission is inclusive to all age groups, including college students but, for reasons determined within this report, they do not attend in large numbers. Therefore, in order for the museum to "stimulate interest" in the college population they will need to market directly to these students.

Boston has always been known as a college city. From the founding of the first private institution for higher learning, Harvard University, in 1636, Boston continued to excel as a focal point for higher education in the United States. Currently, Boston is the number one college city in the world with highest per capita college population of 43 students per 1000 general population. Boston has 35 colleges and universities that account for more than 135,000 students. These colleges and universities have a total operating budget of over $2.84 billion, making education one of the leading industries within the city. Students help the economy of Boston by generating over $700 million dollars a year in off-campus spending for goods and services. For this reason, *Fortune Magazine* has rated Boston one of the best cities in the countries for business, six of the last eight years. *Fortune Magazine* states that the college community is "Boston's secret weapon," because the students generate so much revenue while they are in school but, more importantly, after graduation, students tend to stay in the city and work. The Museum of Science has been made aware of the promise that the college audience possesses and

they feel that an increase in college attendance will prove to be advantageous for the future of the museum.

In order for the Museum to increase the visitation of the college population they need marketing information on the students. This information was obtained through three primary objectives. The first objective was to quantify the number of college students that attend the Museum of Science. This objective was achieved by physically stationing a surveyor from the project group at the ticket seller counter at the Museum. When visitors came to the Museum and appeared to be college students, the surveyor would ask them if they were college students. If the answer was yes, the surveyor recorded the answer in a table for visitor data. Surveying was conducted in one-hour intervals for the complete duration of the day. Surveys were conducted on two weekdays and two weekend days within the same week. From the data collection, an extrapolation, based on previous years data, was used to estimate the number of college attendees for each week within the month, the total month itself, and finally the entire fiscal year. After determining the number of college student visitors at the Museum we then compared our data to other museums across the country and in Boston to see how the Museum of Science measured up. The conclusion was that the Museum of Science receives 28,653 visits from college students out of the estimated total fiscal year attendance of 1,658,109. This meant that only two percent of the Museum's attendance was from college students. When comparing the data to the Museum of Fine Arts in Boston, whose percentage was over eight percent, we established that the Museum of Science's attendance was low enough to warrant further investigation.

The second objective was to determine the level of interest that college students had for the Museum of Science. This objective was intended to provide information on what college students actually think of the Museum. To accomplish this objective it was determined that two types of surveying would need to be done. The first type of surveying was internal museum surveys. This surveying method was successful in determining why students came to the Museum of Science, what they liked and disliked, and any suggestions for changes that they may have had. The second type of surveying was referred to as external surveying and was administered on 18 colleges campuses in and around Boston. This survey provided an understanding of what interested students who do not frequent the Museum. In order to achieve a 95 percent confidence with $^{+}$/- 3 percentage points of accuracy it was determined that a sample size of 752 college students was needed. To make the results statistically relevant, sample sizes

were correctly proportioned between all of the selected survey schools. The results of the survey gave the Museum various types of data on college student interest.

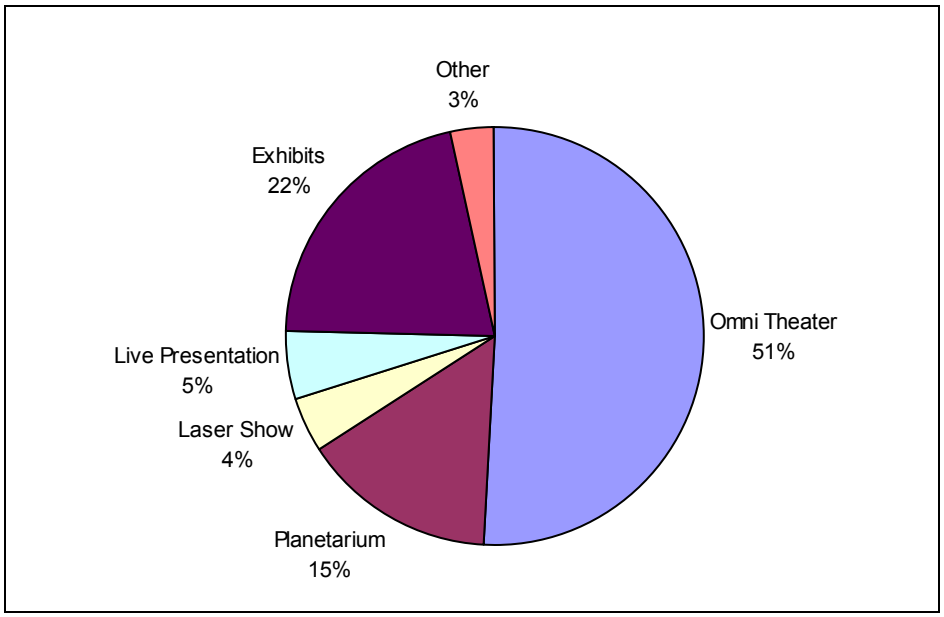

Figure 1: Program Popularity

Figure 1 above represents the data that was collected during the level of interest surveying. This pie chart represents what specific programs at the Museum of Science interest college students. The pie charts in Figure 2 on page 2-9 are others considerations that were taken into account when making the recommendations to Museum Staff. Figure 2 illustrates factors that hinder college students from attending the museum as well as incentives that these students felt would attract them to the Museum. These data were extremely useful in determining our recommendations to the Museum Staff.

The third objective in this project was to assess the marketing that the Museum of Science uses to attract college students. This portion of the project was simple because the Museum of Science does not make any specific attempts to market to college students. Therefore, within this objective the focus was on comparing the Museum of Science to other museums across the country and gathering recommendations.

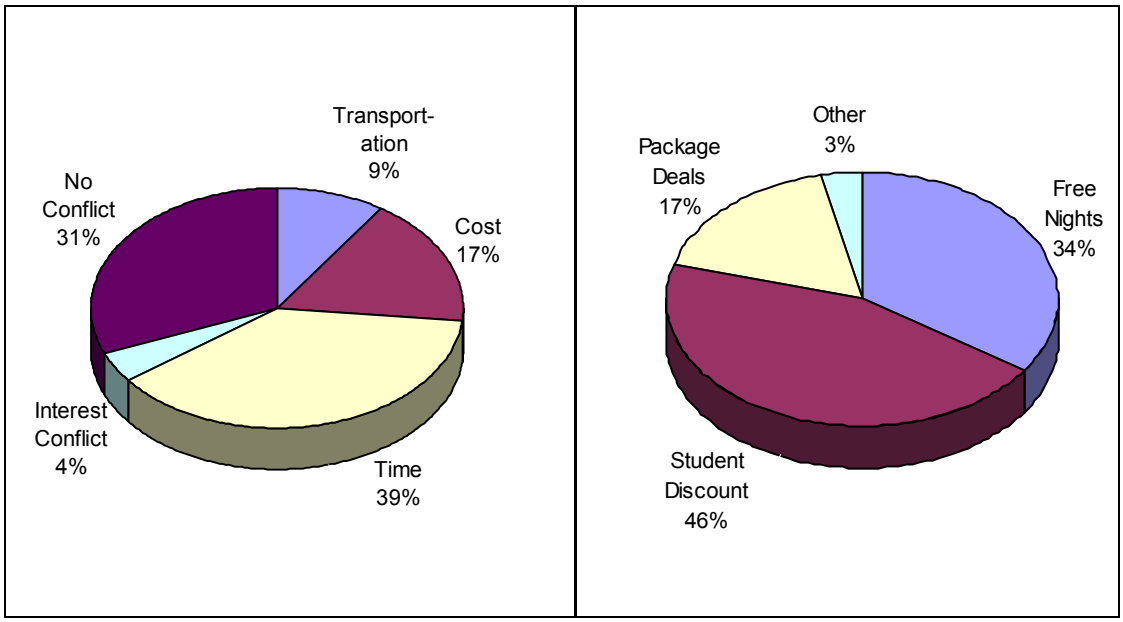

Figure 2: Factors Hindering Attendance and Incentives to Increase Attendance

Based on the results of our Level of Interest Study, and assessing the marketing strategies of both the Museum of Science and other museums across the country, we have developed five major recommendations for future implementation. These recommendations are inexpensive; yet require a substantial amount of effort on the part of Museum staff. Realistically, each of these recommendations can be implemented within the next five years, with a significant amount of success.

Advertising the Museum of Science via public transportation, such as the Massachusetts Bay Transit Authority (MBTA), is prevalent nowadays, from large high-tech companies, major institutions of higher education, and professional sports organizations. The Museum of Science would substantially increase college student awareness by advertising inside subway cars and "T" stations, as well as on buses, and possibly even inside commuter rail trains. This would be more expensive than some of the other recommendations, but is still a viable option.

One of the most structured recommendations we can suggest to the Museum of Science Marketing Department would be to make an initial investment in University Agreements. Under the University Agreement, colleges and universities would pay the Museum of Science a flat fee based on their enrollment. By paying the Museum of Science this small fee, students from these institutions may attend the exhibit halls for free. Furthermore, if a student wishes to attend a special exhibit, they may do so by paying a nominal fee. By convincing colleges and universities

that this fee would benefit their students academically and culturally, the Museum would experience an increase in college student attendance as well as, a boost in revenue that might not otherwise have occured.

Another structured recommendation would be to have what we like to call student-ambassadors at local colleges and universities. Student-ambassadors, who would be undergraduates at universities in Boston, could do everything from putting up posters for upcoming OMNI (IMAX) shows, to entering an article in the campus newspaper every month. These students would be given incentives for their work, and would be able to give quarterly status reports on campus awareness of the Museum and its offerings. These students would be active in various different clubs and organizations on campus, so as to communicate awareness to the diverse college population. Having a core group of students who have the time and ability to advertise to their college campuses would serve as indispensable, inexpensive means to significantly increase awareness about the Museum – probably the biggest factor behind the lack of college student attendance.

Along the lines of student-ambassadors would be utilizing Resident Advisors, who run the social programming for each floor or wing of a dormitory. They are in charge of planning group activities that foster team-building among students. Orientation Leaders fulfill the same role as RA's, just during freshman orientation periods and would likewise be suited, would be excellent individuals to keep informed of events and products from the Museum of Science. Each institution has a Residential Services Office, where these individuals have gone through training and are continually updated with ideas and suggestions for planned activities. This would be another great way to increase awareness of the Museum and what it has to offer college students.

The last major recommendation we have involves corporate sponsorship, another inexpensive means to attract larger numbers of college students. The Museum recently unveiled the Center for Science and Technology, a new interactive exhibit with high-tech equipment that focuses on the newest technologies and science breakthroughs today. Large corporations such as EMC Corp., Nortel Networks, and Teradyne Inc financially support this exhibit. These companies provide the capital to create such an exhibit, and therefore determine to what degree and kind their organizations are advertised via the exhibit. Corporate sponsorship would allow the Museum of Science to hold such events as a College Career Fair, college student recruiting,

and technology and design competitions with substantial incentives. This would also significantly increase college student attendance at the Museum.

Analyzing the attendance data and marketing strategies of the Museum of Science and other museums across the country has shown us that marketing to college students can be done. Marketing specifically to this demographic requires substantial effort and initiative on the part of marketing directors and associates, in conjunction with individuals from other departments such as finance, programming, and attendance (data analysis). Our recommendations were inexpensive overall, and could be implemented within the next few years, increasing college student attendance.

3 Intro duction

The Museum of Science has a well-known reputation as "a great place to bring the kids." While the museum staff recognizes that maintaining family audiences is essential to the museum's success, they would also like to attract a larger number of college students to the museum. The purpose of this project is to aid the Museum of Science in obtaining data on college attendance at the museum and make realistic recommendations based on the information collected. This data will include accurate museums visitor studies as well as data taken from surveys of college students on college campuses in Boston. These data will provide the Museum of Science with measurements of how many college students actually attend the museum and why these students choose to go, or not go, to the museum. From the data collected, we will evaluate the marketing performance of the Museum of Science and make recommendations on how to improve the college student presence.

Worcester Polytechnic Institute in Worcester, Massachusetts and the Museum of Science, in Boston, Massachusetts are sponsoring this project. Our advisors are Professors James Hanlan and Fabio Carrera. The liaison between the project group and the Museum of Science is Suki Abbatiello, who holds the position of Marketing Associate. Suki provided our group with guidance in understanding the wants and needs of the museum throughout our time in Boston. The project group consists of four members, each with a diverse background in science and mathematics. Our knowledge of statistical analysis allowed us to provide the museum with appropriate, relevant results.

This project report carefully adheres to a specific procedure so that the reader will understand the reasoning of the project group without difficulty. In this project report, we described the project in detail, identified the major goals, comprehensively described the methods by which the goals were accomplished, and present about our results. The interpretation that is used in each of the subsequent chapters is listed below:

- *Background* – the intention of this chapter is to provide the reader with a basic perception of the history of the project. Information included in the Background section was gathered from reliable sources, such as books, journals, newspaper articles, and interviews. After reading this chapter, the reader should gain an understanding of the history of museums, how museums affect their community culture, why science

museums are distinctive, and some useful statistics about other science museums across the country.

- *Methodology* – the intention of this chapter is to provide the reader with the procedure that was followed in achieving each of our goals. This thorough procedure should supply the reader with specific information pertaining to each type of data collection. This information includes a timeline and description of survey areas.
- *Results* – this chapter contains a presentation of the results of our project. This chapter's intention is not to provide any analysis but only to supply raw figures and data. After reading this chapter the reader will attain an appreciation of the figures and data that were collected during the study.
- *Analysis* – the purpose of this section is to provide analysis of the data recorded in the results chapter. By reading this chapter the reader will receive an in depth of the conclusion of the project. This section is not limited to supplying conclusions because it also imparts recommendations based on the results and analysis.
- *Bibliography* – the intention of this chapter is to make available the sources that are used in this project report. This chapter is formatted using standard APA style to make the sources, which are included, simple to locate.
- *Appendices* – the purpose of this chapter is to present the reader with information that is used in the report in a clear-cut manner. The appendices include the annotated bibliography, where each source from the Bibliography is explained in a short paragraph.

4 Backgr ound

The purpose of this chapter is to provide the reader with a solid foundation of background information that will enable him or her to understand fully the results that were provided within this report. This section does not contain all information pertaining to Museums but only the facts that are relevant to this project.

4.1 Museums Throughout the Ages

According to the American Heritage Dictionary, a museum is "A building, place, or institution devoted to the acquisition, conservation, study, exhibition, and educational interpretation of objects having scientific, historical, or artistic value." It is generally accepted that museums fulfill three main functions. They serve as depositories devoted to the preservation and conservation of objects of particular value – treasured for their association with events and personalities of history, for their significance in representing human excellence in terms of scientific ingeniousness or of artistic achievement, and for providing samples of the natural environment or objects related to human ways of living at different times and in different societies[1]. Museums are widely known as centers of research and education. Some museums devote themselves to one particular area of study where others serve multiple purposes. Visiting a museum is an excellent way to learn more about art, science, and history as well as, hobbies and collectibles. Museums help to teach our society about the world we live in by providing useful information about the past, present, and future. In the sections below, we explore how museums developed, why they are important to today's society, and what characteristics define modern museums.

4.1.1 Histor y of Museums

The word "museum" is a Latin word derived from the Greek *mouseion*, which is a temple dedicated to the nine Muses, who were goddesses of the arts. During the Renaissance the term began to be applied to a collection of objects of beauty and worth[2].

The first *mouseion* dates back to about 290 BC in Alexandria, Egypt. Ptolemy I Soter founded the *mouseion* of Alexandria with the purpose of teaching and the promotion of

[1] Wittlin, *Museums: In Search of a Useable Future*, pg 2
[2] Encarta Online

scholarship. Within the *mouseion* were botanical gardens, a library, a dining hall, lecture halls, and an astronomical observatory. Objects inside the museum included surgical and astronomical instruments, animal hides, statues, and portraits. Unfortunately, during a period of civil uprising around 270 AD, the *mouseion* and library were destroyed[3].

During the Middle Ages, there was a continued interest in the collection of precious objects. Cups and goblets made of gold and precious metals were used during religious ceremonies. These objects tended to be religious treasures that were relics of saints and martyrs. Public viewing of the objects was limited to certain, special holy days.

With the transition from the Middle Ages to the Renaissance came a renewed interest in art and history. Around the world, treasures were collected and wealthy families began to take a serious interest in collecting beautiful objects as a sign of power. Private collections could now be found all over Europe. Some of these collections are still available for viewing in the galleries of today's museums.

Museums were not always the way they are in the present day. Modern museums were first established in the 18th century in Europe. During the mid-1700's the French government began a public program where artists and students were invited to view about 100 pictures that were hung in the Luxemburg Palace in Paris. Years later, the collection was transferred to the Louvre. The Louvre originated during the French Revolution and is said to be the first distinguished public art museum, opening its doors in 1793. Although the British Museum in London was founded in 1753, as a public museum, it cannot truly be called the first public museum because visitors had to apply in writing for admission[4].

The founding of museums in the United States began in 1773 with the Charleston Museum, in Charleston, South Carolina. The main focus of this museum was the collection and presentation of data on the natural history of the Southeast region. From 1773 to 1850 the United States experienced the establishment of nearly 60 new museums, including the Massachusetts Historical Society, in Boston, in 1791 and the Smithsonian Institute, in Washington, D.C., in 1846.

In the United States there are a large percentage of the museums that are owned and operated by colleges and universities. The first of the college and university art museums, the

[3] Encarta Online
[4] Britannica Online

Trumbull Gallery at Yale, was opened in 1832. Today there are more than 150 college and university art museums in the U.S. comprising almost one-third of the total art museums in the country.

Today there are more than 8,200 museums in the United States with the mission of collectively safeguarding and interpreting our nation's historic, scientific, and cultural patrimony. Combined, these museums experience over 865 million visits per year, have a collective operating budget of over 5 billion dollars and employ over 425,000 people[5].

4.1.2 Effect of Museums on Community Culture

The use of the word "museum" during the 19th and 20th-centuries described a building housing cultural information to which the public had access. Museums have always responded to the societies that created them. In recent years, there has been a decrease in the emphasis on the museums as buildings and an increase in the focus on the interpretation of the objects. This is evident in modern open-air museums where the outdoor environment is used to focus the museum-goers on the objects rather than the building. In society today, it is also not uncommon to see a virtual museum. Virtual museums exist in electronic form over the internet and are popping up all over the nation. However, they are ultimately dependent on the collection of the real museum where they get their information/objects.

If a museum wants to continue to fulfill its mission, it must focus its attention on the community where it is located or which provides its visitor base. Community input is one of the most essential elements in the success of a museum. If people believe that the museum is "theirs," then they will take an interest in its welfare and keep it vital. Community opinion is a crucial force in the success or failure of a museum. Community members should not make all policy, but allowing them some voice will go a long way toward creating the type of neighborhood involvement that makes a museum flourish[6].

According to George F. MacDonald, a prominent authority on museumology, museums are products of their own social context, and it is proper that they should be so. It is, however, dangerous to assume that a place is guaranteed for museums in the society of the future. If we accept that their purpose is to be of service to society, then it is imperative that they be responsive to their social environment in order to remain relevant to changing social needs and

[5] American Association of Museums Online
[6] Howard Levy pg. 25

goals[7]. MacDonald also talks of how important the community is to the museum. He cites the effects of immigration into the English-speaking world as reflecting the conflicting needs to build a global society in which all people can participate while preserving specific cultural heritage and identities[8]. Museums are a form of cultural crossroads where all elements of the community have the right to participate. To target the community as a whole, the museum must accommodate, in some way, the interests of the whole community.

4.1.3 Funding of Museums

In recent years, the way in which museums are funded has become an increasingly controversial topic. Due to recent cuts in public funding, there has been an increase in the competition for private funding. As taxes rise and inflation rates soar, museums are always looking for new sources of funding. One of the most popular ways to raise funds is to charge admission. Charging admission can consist of family memberships or general admission. Gift shop, food sales are among the best ways to raise funds without charging admission. However, some museums are adamantly opposed to charging admission to visitors because they feel that the educational and cultural experiences that they provide should be free of charge. Also, the probability of the attendance going down when admission rates are instituted is very high.

According to the American Association of Museums (AAM), about 60 percent of the museums in the United States are privately owned and run as non-profit institutions. Federal, state, and local governments manage the other 40 percent. Since more than half of the institutions in the United States are not-for-profit, there must be funding available to support them. Non-profit museums draw in reasonable federal support from many organizations including: The Institute of Museum and Library Services (IMLS), The National Endowment for the Arts (NEA), The National Endowment for the Humanities (NEH), and the National Science Foundation. During fiscal year 2000, these 4 organizations combined to fund almost $300 million[9]. Since the government is only funding a modest amount of the operating budget of most museums, the museums have to look to the private sector to aid in funding. In recent years, private funding has been the driving force in most non-profit museums. According to the AAM, the reason for the increase in private funding is because of the tax exemption policy for people

[7] Ivan Karp pg. 158
[8] Ibid pg. 176
[9] American Association of Museums, *Government and Public Affairs*

who donate funds to the museums. Donating to museums provides both exemption and philanthropic incentives for both individuals and corporations. For this reason it is no surprise that tax exemption is of chief importance to the financial situation of today's museum society.

4.1.4 Issues Facing Museums Today

In the present day, there are a few critical issues that challenge the success of modern museums. In order to keep museum popularity from plummeting in the future, there are a few issues that should be resolved. The first issue is the one of blockbuster exhibitions. These blockbuster shows are enormous and travel the country, stopping at a few select museums, attracting massive crowds. An example of this type of exhibition was "Picasso," where many of the spectators who came to the show were not formerly museum visitors. One of the problems with these large shows is that they draw a crowd that is not necessarily concerned with the mission of the museum and the museum's educational goals. On the other hand, these massive crowds are also needed to keep the museums in business and initiate the private funding that the museums need[10].

Another issue that is facing modern museums is the inability to supply the number and variety of programs and service that the ever-increasing numbers of visitors require (presently over 865 million per year). By changing and increasing the number of exhibits that a museum offers, the museum takes on the need to hire more staff, increase funding, and allow adequate time for maintenance. Renovations and additions are always ongoing but there needs to be a way to satisfy the visitors' needs while they take place.

4.2 Science Museums

A science museum is different from all others types of museums mainly because it focuses on a different subject. Science museums highlight the natural sciences, such as Physics, Geology, Astronomy, etc., whereas, a history or art museum would explore the fine arts.

In an art museum, the viewer takes on the role of an appreciative spectator. There are numerous collections of paintings, sculptures, and artifacts that the visitor could simply view and appreciate as works of art. For this reason, the viewer frequently observes postings that read, "Please do not touch this exhibit". In other words, the viewer must restrain him/herself from

[10] Flora S. Kaplan, MA PhD. NYU

touching the glassed-in exhibits and the conventional paintings or else he/she might get a reprimand from a watchful guard. An art and/or history museum is not generally an interactive environment.

A science museum is the exact opposite of an art or history museum in many ways. Science museums maintain an open atmosphere in the operation of their facilities. People of all ages can come to any science museum and experience the environment that the building offers. There are many exhibits and experiments that visitors can use, develop, put into motion, etc. Visitors are treated to a hands-on experience. There tend to be no guards who will reprimand visitors who wish to touch an exhibit with their hands, only "guides" to explain the exhibits to an interested passerby.

A recent study found that "A higher percentage of science museum directors (92%) than of art and history museum directors score "providing educational experiences for the public" as one of the top priorities." Science museum directors feel this to be a purpose of primary importance in the eyes of their trustees in approximately the same numbers (93%).[11]

In another light, "directors of history museums see their museum's main role to be "conserving the cultural and/or scientific heritage" (70%), followed by "providing educational experiences" (61%) and "interpreting the past or present" (60%). Encouraging positive social change ranks lowest (1%) as one of the two most important purposes of history museums."[12]

As the reader might interpret, these quotes seem to reflect the different ideals and priorities of these diverse institutions.

4.3 American Science Museums

The following section provides a compilation of data on the major science museums across the United States. This information is relevant to our project because it gives a basic outline of how other science museums operate, their missions, and ultimately their degree of success in attracting college students. Later in this report, using this data, we will analyze the marketing strategies of MoS and compare them to these other museums.

[11] National Endowment for the Arts, Pg. 37
[12] Ibid Pg. 35

4.3.1 Californi a Science Center

4.3.1.1 Histor y[13]

The first State Exposition Building opened in 1909[14], which was a museum that displayed California's prized scientific collections at the time. Promptly after World War II, technology in the United States was of increasing importance, so the State Exposition Building was remodeled "to show visitors the role of science and technology in everyday life"[15] and became the California Museum of Science and Industry in 1951 in Los Angeles.

In 1987, "the Museum began a comprehensive, long-range planning effort that included a reassessment of its role and its methods." The final design called for a facility that would educate and would be flexible to the needs of a diverse community. This facility became the California Science Center.

4.3.1.2 Mission Statement

"Explore the wonders of the world we live in - from the outer reaches in the universe to the hidden lives of the microscopic realm - through programs designed for children, families, adults, schools, and educators."[16]

4.3.2 Explorat orium

4.3.2.1 Histor y

In 1965, University of Colorado physics professor Frank Oppenheimer visited some museums in Europe such as the Deutsches Museum in Munich and a museum in South Kensington, London. After this, Oppenheimer was invited to a conference in Burlington, Vermont,[17] to discuss the importance of museums. Oppenheimer wanted to create a museum where people could learn and explore. The idea of the Exploratorium came about and the possibility of having the museum in the Palace of Fine Arts in San Francisco was accepted in July of 1968.[18] "The Exploratorium is a collage of 650 interactive exhibits in the areas of science, art, and human perception, and it stands in the vanguard of the movement of the "museum as an educational center."[19]

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[13] www.casciencectr.org (history)
[14] Ibid (Brief History)
[15] Ibid (California Museum of Science and Industry in 1951)
[16] Ibid (mission statement)
[17] Idem.
[18] www.exploratorium.edu (The Palace of Fine Arts)
[19] Ibid (synopsis fact sheet)

4.3.2.2 Mission Statement[20]

"The Exploratorium is a museum of science, art, and human perception founded in 1969 by physicist Frank Oppenheimer. The Exploratorium's mission is to create a culture of learning through innovative environments, programs, and tools that help people nurture their curiosity about the world around them."

4.3.2.3 General Information[21]

600,000 people come to the Exploratorium each year. 53% of the visitors are adults, 47% are children, and 62% of the visitors come from California, 21% from other states, and 7% come from outside the United States. Roughly 59% of the visitors who attend receive free or discounted admission; also 47,000 visitors attend on Free Wednesday, which is the first Wednesday of every month.

The Exploratorium has a unique way of teaching science. Three-dimensional exhibits offer learning that is difficult to obtain in a classroom. Also, the Exploratorium takes an unconventional approach to culture. Every year from four to six visual artists and the same number of performing artists are invited to create works of art while staying in the Exploratorium.

4.3.3 Miami Museum of Science

4.3.3.1 History[22]

In 1949, The Junior League of Miami's "Project Finding Committee" determined that Miami was in need of a museum. The Junior Museum of Miami was developed as a private non-profit organization in 1950. Expanding very rapidly, the museum was in need of a new facility, later to be found in the Miami Women's Club building on Bayshore Drive. At this time, the Museum of Science and Natural History was formed.

In 1960, the first building of the new science museum opened and was built on the historic Vizcaya complex, which was provided rent-free by the County. In 1966, the Space Transit Planetarium was constructed which became the leading facility of its kind in the world.

During the last ten years, the Museum has expanded so it is able to provide ample space for its 4000 member families. The Museum has over 250,000 annual visitors, and one of the

[20] www.exploratorium.edu (mission)
[21] Ibid (fact sheet '99-2000)
[22] www.miamisci.org (Our History)

largest summer science camps in the nation, (with ages ranging between 3-14). The Museum's yearly operating budget has grown to 2.5 million dollars as a result of good annual attendance and support from groups like the Orange Bowl Luncheon Committee and the Latin American Friends.

4.3.3.2 Mission Statement[23]

"The Museum promotes science literacy and serves as a catalyst for continued science exploration by providing science education in a stimulating, enjoyable, non-threatening environment.

The Museum plays a leadership role in informing and exciting South Florida's residents and visitors about all areas of science including, but not limited to, the physical and natural sciences, astronomy, technology, and the area's unique ecology.

The Museum continues to assess the scientific and technological needs and interests of the community and service these needs through focused, on site and outreach initiatives.

The Museum acts as a community resource on issues of science, health, technology, and the environment through timely dissemination of information and provision of learning opportunities for the public and other organizations, agencies, and institutions.

The Museum cultivates support in the private, corporate, government, and academic sectors."

4.3.4 The Franklin Institute Science Museum

4.3.4.1 History[24]

On February 5, 1824, Samuel Vaughan Merrick and William H. Keating founded the Franklin Institute of the State of Pennsylvania for the Promotion of the Mechanic Arts. The Museum was located in the Philadelphia Courthouse and around the specific purpose of honoring Benjamin Franklin and advancing knowledge of his inventions.

In 1930, the Franklin Institute and the Poor Richard Club began to seek funds to build a new science museum, 5.1 million dollars were raised in 12 days. In 1932, construction began on the new museum on 20th street where the Benjamin Franklin Parkway cut across. In 1933, the Fels Planetarium, donated by Samuel S. Fels, was constructed; it was the second one of its kind in the United States.

[23] www.miamisci.org (Mission Statement)
[24] http://sln.fi.edu (The Museum's History)

On January 1, 1934, The Franklin Institute Science Museum opened to the public and provided a hands-on approach to science and technology. In May of 1990, the Tuttleman IMAX Theater opened which increased the popularity of the Museum. The new exhibits, IMAX films, and interactive presentations make The Franklin Institute Science Museum a popular attraction in Philadelphia.

4.3.4.2 Mission Statement[25]

"The mission of the Franklin Institute Science Museum is to stimulate interest in science, to promote public understanding of science, and to strengthen science education. The Institution maintains an exemplary, innovative museum of science with engaging, educational exhibits and programs; supports a diverse set of partnerships with all levels of the formal educational system; interprets the social and historical impact of science and technology; recognizes outstanding achievement; and provides a forum for discussion of important scientific issues. The Franklin Institute also serves to perpetuate the legacy of Benjamin Franklin.

As of December 22, 1998, The Franklin Institute has again received accreditation by the American Association of Museums (AAM). It is the highest honor a museum can attain, and only 750 out of 8000 museums have attained this honor."[26]

4.3.5 The Chicago Museum of Science and Industry

4.3.5.1 History[27]

Chicago businessman Julius Rosenwald, of the Sears Roebuck Company, was inspired to create a museum for industrial education when he visited the Deutches Museum in Munich in 1911. Rosenwald, with the help of other Midwest business leaders, restored and converted the Palace of Fine Arts, which was left over from the 1893 World's Fair in Chicago, so visitors could interact with exhibits rather than just looking at displays.

In 1933, the museum opened to the public and was the first museum to have an industrial theme in its exhibits where the idea of hands-on learning is encouraged. The Museum attracts approximately 2 million visitors annually and is one of the most popular tourist attractions in Chicago; it is also one of the seven most visited museums in the United States.

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[25] http://sln.fi.edu (The Museum's History)
[26] Ibid (The Museum's Highest Honor)
[27] www.msichicago.org (Historic Origins)

The Museum is the largest science museum in a single building in the Western Hemisphere with over 800 exhibits and over 2000 interactive units located in over 350,000 square feet of exhibit space. Also, the Museum has been in two World's Fairs: The World's Columbian Exposition in 1893 and the Century of Progress Exposition in 1933.

Museum exhibit highlights include the following: a working coal-mine shaft, cantilevered Boeing 727, WWII German Submarine, model Railroad, brain and computer imaging, space crafts of all kinds, and antique cars. Many of the exhibits have won awards from the American Association of Museums.

4.3.5.2 Mission Statement[28]

The mission of the Chicago Museum of Science and Industry is to provide "industrial enlightenment" for the purpose of science education and to be a museum where visitors can interact with the exhibits, not just view displays and artifacts.

The Museum is a member of the American Association of Museums, The Association of Science and Technology Centers, the Chicagoland Chamber of Commerce, and the Chicago Convention and Tourism Bureau.

4.3.6 The Smithsonian Institution

The National Museum of Natural History, National Air and Space Museum, National Museum of American History, and the National Art Museum are some of the more popular Smithsonian Museums.

4.3.6.1 Brief History

The National Museum of Natural History welcomes more than 6.4 million visitors each year, making it the world's most popular natural history museum. Opened in 1910, the green-domed landmark on the National Mall was the first Smithsonian building built exclusively to house collections and the curators who conserve and study them. It remains the largest bureau of the Smithsonian, which encompasses the National Zoo and 16 museums and galleries in Washington and New York.

The Museum's mission has three parts: research, care of the national collections, and education in anthropology and the natural sciences. The goal of permanent and temporary exhibitions is to present to a wide audience accurate information on the current state of

[28] www.msichicago.org (Historic Origins)

knowledge in various fields, especially Earth and planetary science, ecosystem history and global change, and biological and cultural diversity. [29]

4.3.6.2 Mission Statement

"The National Museum of Natural History is dedicated to understanding the natural world and our place in it. To do this they do the following: conduct research; develop, preserve, and manage national collections; and present educational programs so that the integrity, stability, and beauty of the natural and cultural heritage can be valued, sustained, and enjoyed."[30]

4.4 Marketing Museums in the United States

Marketing is a necessary component for museums to increase attendance. The following section will provide information about marketing programs around the country and Boston.

4.4.1 Museums in Chicago

Chicago's museums are losing attendance and state funds. "Attendance at all of the city's top institutions is down in this decade - in some cases precipitously – threatening funding and prompting a re-evaluation of outdated marketing programs." From 1991 – 1994, attendance fell in the following institutions: Adler Planetarium, down 33.8 %, John G. Shedd Aquarium, down 18.3 %, Chicago Historical Society, down 14.1 %, Art Institute of Chicago, down 13.6 %, Museum of Science and Industry, down 5.4 %, and the Field Museum, down 5.2 %.[31]

The Museum of Science and Industry realized that, to market the museum better, they should appeal to what the public wants. 60,000 square feet of new exhibits, at a cost of 21 million dollars, was introduced as well as renovations in the popular coalmine shaft.[32] Due to the changes the Museum of Science and Industry instituted, as of 1995, they saw a rise in attendance up 16 % from 1993.

"Attendance is a key measure of how well a cultural institution serves its community, and is used by foundations, corporations and government agencies when deciding on grant applications." Museums must realize attendance is important and market to the people who will come back for return visits. In the 1980s, museum attendance was based on huge exhibits that would attract everybody. These marketing techniques do not seem to work today because they

[29] www.mnh.si.edu/SpecialEvents/AboutNMNH.htm (About the Museum)
[30] Ibid (Mission Statement)
[31] Museums' Dark Days, (Crain's Chicago Business)
[32] Idem

do not build loyalty, and museum attractions are made available on the web.[33] However, in some cases Blockbuster exhibits work well.

Museums need feedback on how well their exhibits attract people. "Museum are in a fundamental shift from being inwardly focused to being market – driven, and getting out the front door and meeting your neighbors."[34] Museums need to focus on who they are attracting and why.

4.4.2 Cleveland's Museums

Cleveland had great success from 1994 to 1996 in attracting tourists and people within their city to the Great Lakes Science Center, the Rock and Roll Hall of Fame and Museum, and the Cleveland Museum of Art. "One of Cleveland's goals is to be the destination of choice between New York and Chicago for a cultural / leisure vacation."[35]

Cleveland realized that they had much success marketing their attractions as brand new seven years ago, but now they need to reach people outside of Cleveland and attract them to the "whole destination."[36] The Great Lakes Science Center uses a futuristic setting to get corporate groups from out of town. The Science Center has hands–on exhibits and like the Omnimax Theater, both of which have great popularity. The Liquid Vision exhibit of lasers and holograms and the Virtual Hoops exhibit attract many people and promote return visits because they are interesting.[37]

The Cleveland Museum of Art has had great success from its special exhibitions. "40 % of the 138,000 visitors to the 1995 Pharaoh's art exhibit came from outside Northeast Ohio, and 58 % of the 173,000 who attended the Faberge egg exhibit came from out of town."

4.4.3 Boston Museum of Science

"Every brain needs a playground" is a message introduced by Gearon Hoffman, an advertising agent who works with the Boston Museum of Science. Hoffman also introduced the tagline, "It's Alive" from past television advertising.

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[33] Museums' Dark Days, (Crain's Chicago Business)
[34] Idem
[35] Cleveland: A Sight for Tour Eyes, (Crain's Cleveland Business)
[36] Idem
[37] Idem

Hoffman wants to portray the Science Museum as a place where children and adults can enjoy themselves and learn about the world of science and technology. His message suggests that people will eagerly use their brains at the Science Museum. Hoffman realizes that attendance has been strong due to his campaign to promote Omni shows or big exhibits. However, he wants people to think of the Science Museum even when there are no big premiers of an Omni show or huge exhibits.[38]

4.5 The Boston Museum of Science

The Boston Museum of Science is particularly important to this project because they are the sponsoring organization. The data that is collected in the project will be specific to the Boston Museum of Science but may have relevance to other museum studies across the nation.

The Boston Museum of Science has been a major part of Boston's culture since the museum's inception in 1830.

In 1830, six men with an interest in natural history started what is known as the Boston Society of Natural History. This society premiered many samplings of art collections in various temporary locations in the city of Boston. This trend continued until 1864 when the Boston Society of Natural History opened the New England Museum of Natural History. This new museum was located on the corner of Berkeley and Boylston Streets in Boston's Back Bay. That Museum is now known worldwide as the Museum of Science.

After the Second World War, the Society sold the Berkeley Street building, changed its name to the Boston Museum of Science, and purchased the lease for the land that spans the Charles River Basin. This area is now known as Science Park. The purchase of this land occurred because of the leadership of Bradford Washburn, one of the original benefactors of the Museum, as well as an author, photographer, mapmaker, and explorer who for 41 years led expeditions for and directed Boston's Museum of Science. The lease itself was purchased from the Metropolitan District Commission and was negotiated for a 99 years.

The Boston Museum of Science designed and built the first traveling planetarium in New England. The erection of this planetarium promoted the development of a new Museum building. The cornerstone for the new Museum was laid at Science Park a year later, and a temporary building was erected to house the Museum's collections and staff.

[38] Boston Museum of Science's new 30 – second TV ad. (Adweek New England)

The first wing of the new Museum officially opened in 1951. This wing comprised approximately fourteen thousand square feet and all of it was devoted to space for exhibits. The new Museum's first wing was already much larger than the entire exhibits area of the old Berkeley Street building.

In 1956, the Museum was successful in campaigning for a Science Park MBTA station that now brings visitors to within 200 yards of the Museum. The new station added a new convenience to potential visitors of the museum because now people could travel to the Museum either conventionally by car or directly by the MBTA's subway system. The Charles Hayden Planetarium, funded by major gifts from the Charles Hayden Foundation, opened in 1958.

By 1968, further building expansion was under way as ground was broken for the Museum's west wing which was completed in the early 1970s. The Elihu Thomson Theater of Electricity, which houses the 2 1/2 million-volt Van de Graaff generator, opened in 1980. The high voltage electricity generator stands two-stories tall and was given to the Museum by the Massachusetts Institute of Technology in 1956.

The Mugar Omni Theater, opened in 1987, utilizes state-of-the-art film technology to project larger-than-life images onto a five-story high, domed screen, creating a first-hand experience for viewers.

"The Museum has remained on the cutting edge of science education by developing innovative and interactive exhibits and programs that both entertain and educate."[39] Science itself is ever changing and thus the Museum itself is committed to change by possibly changing its environment to house exhibits that interpret new developments in science and technology.

4.5.1 M ission Statement

The mission of the Boston Museum of Science is to stimulate interest in, and further understanding of, science and technology and their importance for individuals and for society.

To accomplish this educational mission, the staff, volunteers, overseers and trustees of the Museum are dedicated to attracting the broadest possible spectrum of participants, and involving them in activities, exhibits and programs which will:

[39] www.mos.org (mission statement)

- Encourage curiosity, questioning and exploration,
- Inform and educate,
- Enhance a sense of personal achievement in learning,
- Respect individual interests, backgrounds and abilities, and
- Promote life-long learning and informed and active citizenship.

All this is offered in the spirit that learning is exciting and fun at the Museum of Science.

The basic organization of the Museum of Science can be seem in the following flow chart, Figure 3.

Museum of Science Organization Chart

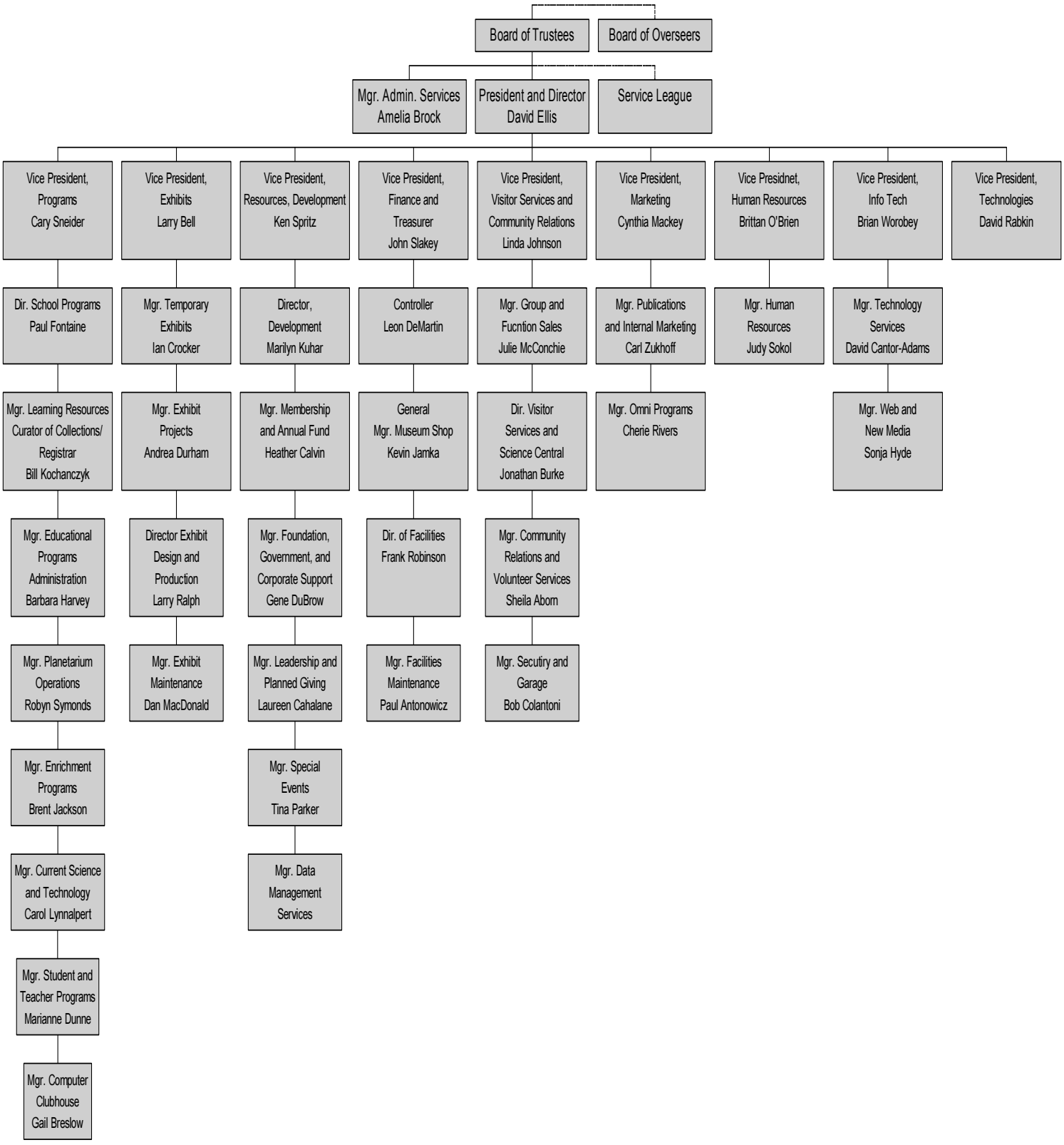

Figure 3: Organization of the Museum of Science

4.5.2 Location and Accessibility of the Museum of Science

The Museum of Science in Boston has a unique location, right on the Charles River, beside the McGrath and O'Brien Highway. Just across the Charles River, there are about 15 colleges within a five-mile radius. The Museum of Science is completely accessible to roughly fifteen colleges and universities with a total student population of about 125,000 students. All are within an approximate 10-minute ride on the T. This will play a part in the nature of the marketing scheme that we propose to the Marketing liaison of the Museum of Science.

4.6 Museums and their effect on the College Community

Colleges in Boston proper, as well as within 15 miles of the city (providing reasonable access to the Museum of Science), have the ability to affect the number and type of individuals who attend the science museum. The ability to effectively market to college students is the ultimate goal. In order to do that, certain types of information will need to be obtained about the college students who live in and around Boston, and the institutions through which they obtain their education.

Almost all Boston area college students have access to the MBTA – the subway system. They are connected to the city and to what goes on better than most college students around the country. There is a "T-stop" at Science Park, right outside of the museum of Science, and nearly every college within 6-7 miles of the college is within a 5-minute walk of the nearest "T-stop." Therefore the cost to get to the museum is $1.00 (cost of a T token), and then the cost of admission, whereas if you do not live in Boston, and are driving into the city, you have to pay about $8-$20 in parking, not to mention the frustration of a complicated ride.

If it involves so little to get to the Museum of Science for college students who most likely have the $2.00 for round trip transportation, then the museum must not be interesting enough to them to make them want to go. This is where we begin – establishing why these students would want to go to the Museum of Science. If they are not interested at present, we need to find incentives for them to become interested.

4.6.1 Colleges & Universities Relevant to this Study

The first step in successfully marketing to college students is to determine which groups of colleges and universities should be marketed to. Data has been compiled on 35 Boston area

colleges. All data that is obtained that pertains to Boston's college population is relevant to this study because marketing at any one of them could have similar positive or negative effects based on the college's student population. You cannot exclude any particular type of college because it is unclear at the present time if marketing to any specific type of college would be more successful than another in persuading undergraduates to attend the Museum of Science.

A relevant cross-section of the colleges in the Boston area would include engineering schools, medical schools, law schools, liberal arts and business schools, community schools, all-women schools, and schools devoted to the fine arts. The students at Berklee College of Music, the Boston Architecture Center, the Boston Conservatory, the Mass. College of Art, Emerson College and the School of the Museum of the Fine Arts have between them roughly as many students as Boston University's entire student population. Boston University, Boston College, and schools like the University of Mass., Boston, are broad liberal arts and business schools that have a large number of students across many different disciplines. The Massachusetts Institute of Technology, Brandeis University, Northeastern and Wentworth Institute of Technology all have a focus on engineering, or an education built around practical application of knowledge.

Harvard, Suffolk, and Tufts each have their own specialty that sets them apart from the other colleges. Some colleges are predominantly women, such as Wheelock College. Colleges such as Wheelock need to be marketed to specifically to learn how to attract women in large numbers. One proposal that was suggested to us by our liaison was to think about marketing directly to women, that way when lots of females decide to go to the Museum of Science on perhaps a Saturday night, the men would go as well.

Part of our surveying of college students will involve determining what other type of events and activities college students like to do during their free time and on weekends, that they might be able to substitute with a visit to the museum of Science. Another marketing possibility along the lines of what other activities college students participate in, is to link together several of the other museums and cultural centers in Boston in a type of package that allows a student to visit various locations and events at a discounted cost. The Museum of Science in Boston could itself sponsor this type of event, in which case it would draw attention to its own efforts to market to a broader population, as well as increase the attendance at other cultural institutions in and around Boston.

An estimated 135,000 – 150,000 undergraduate college students populate Boston during a regular academic year. Access to the Museum of Science is also not always easy. Therefore, the specific hours of the Museum and its specific location play an integral part in marketing, as convenience and accessibility are crucial factors in successful attendance. It must also be considered that there are many different groups of students that are being marketed to. We might have to market to each group of students according to discipline, based on the type of school they go to and the programs they are studying.

We believe incentives are the key to generating substantially higher college attendance numbers at the Museum of Science. The Boston Museum of Science has one night per year where they open the Museum to college students for free admission. The students can go anywhere in the museum that night. However, this is only one night per year, and it is not advertised well in advance. Having several of these nights per year, possibly once every 3 months, would establish a regular tradition that students in the immediate Boston area could look forward to attending. Using the OMNI Theatre and other exhibit shows to capture the attention of the audience, would also promote future visits by these college students.

Through our surveying of college students at colleges and universities in the Boston area, we determined that the single biggest factor influencing college students not to attend the Museum of Science is a lack of time. College students are so busy, that they simply don't have the available free time during the Museum's limited hours during the week, or even on the weekend. Free admission during specified hours doesn't always help out college students who might not be able to make those times. However, if there was a student discount that always applied, then students could come to the Museum of Science at their convenience, without having to pay full price for admission.

A possibility that we discussed with our liaison in Boston at the Museum of Science involves the actual large-format films being shown at the OMNI Theatre. Past films incorporate science and educational backgrounds as their premise. Now, however, there are more and more films being made (and thus being displayed) that revolve around modern commercialism rather than the mission statement of the Museum of Science. Air Jordan, and other OMNI films that focus more on modern-day role models and figures of sports and competition, do not lie parallel with the museum's original goal to remain focused on science and education.

Another angle from which one could approach this marketing would be to look at it from the standpoint of the weather. Many colleges and universities organize campus events at certain times of the year, such as Winter Carnival, or a summer "Quad Festival." These are weather-dependant; and though the Museum of Science and all its exhibits are permanently enclosed inside the building's walls, many people are motivated to do things and feel energetic about getting involved in activities based upon their surroundings at the present moment. In good weather, a college student would most likely be a lot more apt to go for a walk, or take the T to the other side of the city, for no reason but to enjoy a day in the park; whereas in January or February, a Boston resident college student would be less enthused to go out in what would be considered "typical New England weather."

Table 1: Undergraduate Populations of Colleges in Boston

*As of 9/1/2000

Institution Founding	Year	Undergrad Population*	Distance from Museum of Science (miles)
Babson College	1919	1701	10.32
Bay State College	1946	400 1.2	2
Bentley College (Waltham)	1917	3600	7.76
Berklee College of Music	1945	3400	1.63
Boston Architecture Center	1889	500	1.5
Boston College	1836	8000	1.15
Boston Conservatory	1867	250	1.84
Boston University	1869	15000	2.13
Brandeis University (Danvers)	1950	3000	9.47
Bunker Hill Community College	1973	6620	.56
Cambridge College	1971	285	2.04
Emerson College	1880	2800	.96
Emmanuel College	1919	650	2.42
Fisher College	1903	2638 .76	
Franklin Institute of Boston	1789	335	1.62
Harvard University	1636	6684	2.5
Lasell College	1851	706 4.71	
Lesley University	1909	550	2.58
Massachusetts College of Art	1873	1400	2.54
MIT 1865		4500	1.23
Mount Ida College	1899	1471	6.9
NE Conservatory of Music	1867	398	1.93
NE School of law	1908	975	1.5
New England College of Optometry	1894	494	1.36
Northeastern 1916		13671	2.02
Regis College	1927	1130	11.5
Radcliffe 1894		62	2.69
School of the Museum of Fine Arts	1945	1190	2.11
Simmons 1899		1300	2.25
Suffolk 1937		3000	.71
Tufts 1852		4800	3.94
Umass Boston	1964	10442	3.8
Wellesley College	1875	2290 11.9	
Wentworth Institute of Technology	1904	3225	2.43
Wheelock 1888		1332	2.62
	Total Population	**132898**	**AVG 3.33**

5 Methodology

This project provides the Boston Museum of Science with information on marketing the Museum to college students in Boston, Massachusetts. Our project team supplied the marketing department at Museum of Science with accurate data that depicts the reasons why college students do not attend the Museum in large numbers. The Museum will use these data to attempt to increase the number of visitors who are college students. The marketing department at the museum has been presented with many types of information from multiple data collection methods. By researching existing data, conducting focus groups, and administering face-to-face surveys, we obtained statistics, relative to why college students do not attend the museum. Using these statistics we made practical suggestions for methods to correct this problem.

The Methodology chapter documents the techniques that were used to collect the information that our project's results are based on. Since the procedure that is followed in this chapter is fundamental to the validity of the results, this chapter contains a thorough description of each method that will be followed.

The Museum of Science has a reputation as a great attraction for younger children. While the museum's marketing department wishes to return attendance by family audiences, they consider the number of college students attending the museum insufficient unacceptable. The marketing staff at the Museum of Science realizes that tapping into the huge college population in Boston could bring increased revenue and a better public perception of the museum. Our group's final report includes information and recommendations that the Museum of Science staff will be able to use to adapt their marketing strategies to successfully market to college students.

The objectives of this project can be summarized in four main sections. The following list contains each of the fundamental objectives with a brief description. A thorough description of the processes that were used to achieve these objectives is included later in this chapter. Our objectives for this project were:

I. *To quantify the number of college students attending the Museum of Science*. By conducting our own data collection, we were able to establish a baseline for the number of college students visiting the Museum of Science. From this number, we were able to substantiate the claim that the Museum of Science does not attract college students in numbers proportionate to their college's presence in the Boston area region. We also

investigated the proportion of students in the general population of Boston and compared that to the attendance proportions at the museum. This objective is extremely important because the methods that will be used to market to the student may be drastically different dependant upon the population that is presently attending the Museum. Therefore, we first quantified the number of college students that visited the museum and then analyzed marketing strategies to increase the number of college students in attendance. To accomplish this goal, we also looked at other museums around Boston and across the country to compare visitor data.

II. *To explore the level of interest of college students in the Museum of Science*. The purpose of this objective was to find out why some college students attend the museum and why others do not. This objective was of particular interest to our group when we were evaluating what the museum can improve upon to attract more college students.

III. *To assess the current marketing strategies of the Museum of Science*. By analyzing the methods that the Museum of Science uses to attract its customers and comparing them to those of other science museums, we identified viable approaches to increase college student attendance at the museum. To accomplish this objective we also reviewed existing data on the successes of other museums, across the country, in attracting college students. These data helped to provide practical recommendations to assist the Museum of Science.

IV. *To provide accurate recommendations to the Museum of Science staff based on our results*. After the analysis of these data, we presented our suggestions for increasing college attendance to the museum staff.

The organizational chart below illustrates the structure of the methodology chapter as it has been presented.

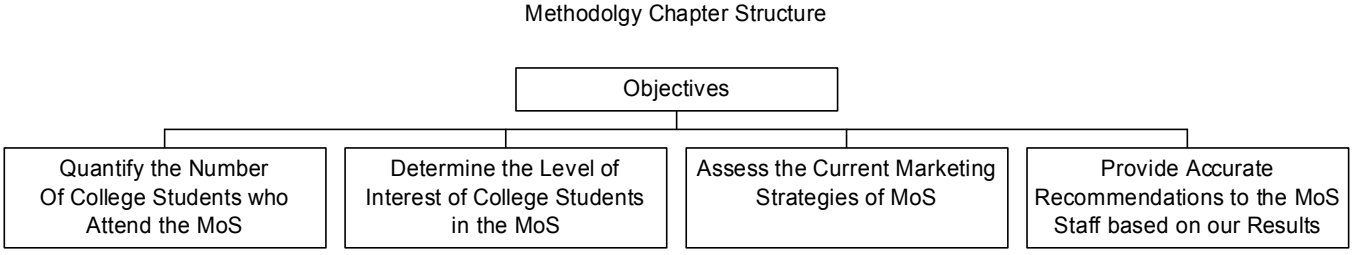

Figure 4: Methodology Chapter Structure

The following provides a comprehensive step-by-step approach to the system that was used to acquire our data. This process is critical to the legitimacy of the results and is therefore explained in full detail in the following sections.

5.1 Domain of the Project

In this section, we explain the area of concentration for our study. With this project, our first step was to look at the Museum of Science mission statement and to figure out to whom it applies. In this case, we were only interested in college students in Boston and its suburbs. The farthest area from Boston that is of interest to this study are the campuses of Bentley and Brandeis in Waltham, about 15 minutes, by car, from the museum. We are obviously not interested in surveying students in California to figure out why they do not attend the Boston Museum of Science. On the other hand, when a college student from California (or any long distance) decided to visit the museum, we found the reasons they chose to come to the museum useful to our project. For the purpose of this project our domain is college students in Boston, Massachusetts.

The Museum of Science is interested in why more college students do not attend their museum in large numbers. To answer this question, we will be surveying college students in the Boston area. Our study area will consist of the 35 colleges in and around Boston. These 35 colleges account for more than 135,000 students. Since the duration of this project is only 7 weeks, we chose a specific group of colleges in Boston to survey that could accurately represent the feelings of the total college population. Table 1, on page 4-35, shows the specific colleges that we chose and their undergraduate populations, as well as M/F proportions. Also, later in the Methodology chapter, a detailed description of the rationale for college selection is presented. Figure 5, on page 5-39, provides an aerial view of the city of Boston taken in 1999. This aerial picture represents our study area and the majority of all research conducted for this project took place within the boundaries of this photograph.

Figure 5 : Aerial View of Boston, 1999

Figure 6: MBTA Subway Route

As you can see from Figure 6 above, the Museum of Science has direct access to the MBTA. This fact proved to be useful when analyzing why more students do not attend the

museum. In the results chapter, the possibility of transportation as a factor for why college student do not attend the Museum, is explored in detail.

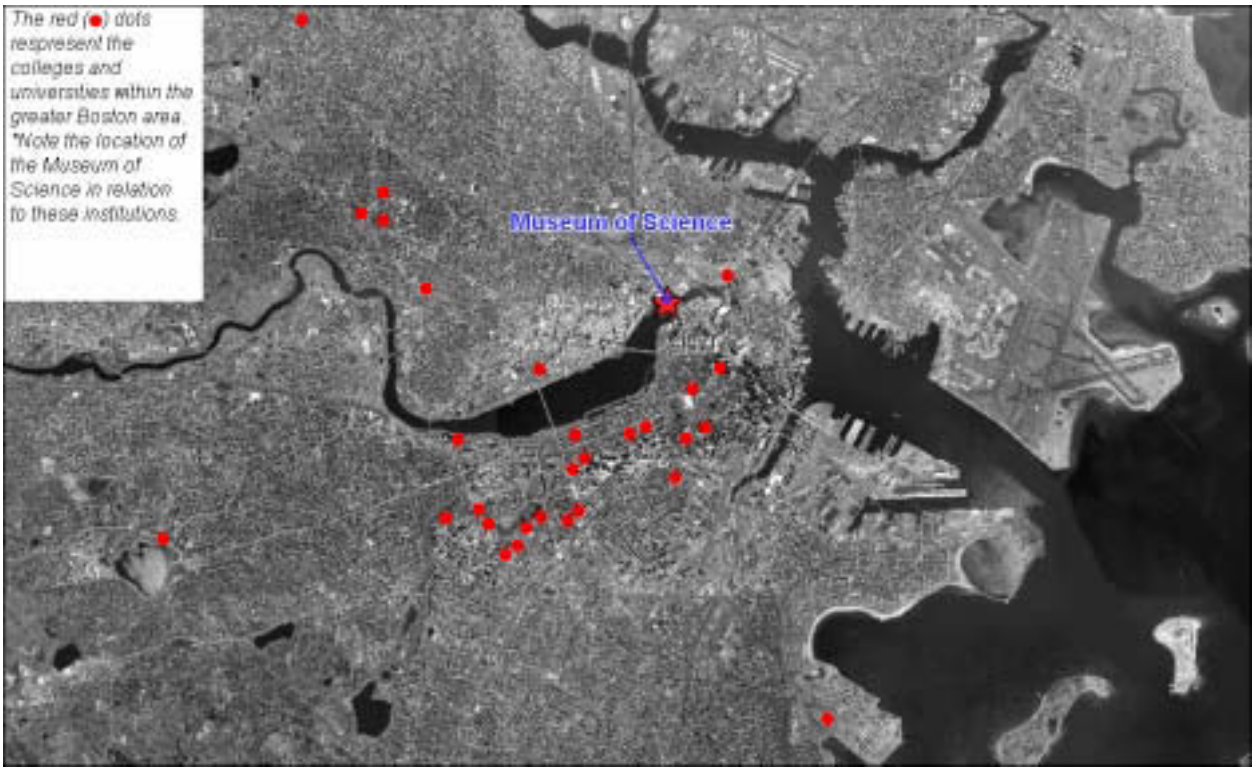

Figure 7: College Locations within Boston

Figure 7 above is an orthographic picture of Boston taken in 1999. This figure maps the colleges in the Greater Boston Area with respect to the Museum of Science using red dots to symbolize the institutions. Map Info 6.0 was used to generate this map and to make a table with all the distances from each college to the museum, as well as the specific colleges population and primary areas of study. Later in this report, in the Results section, we present maps and tables that explain specific aspects of each of the colleges in Greater Boston.

5.2 Defi nitions

Definitions of the important terms that will be used in this report are listed below:

College Student – A college student, for the purpose of this study, is any person between the ages of 18 to 24 currently enrolled in a college or university within or around Boston, Massachusetts.

Annual College Student Attendance – The annual student attendance is the total number of college students who attend the museum per year.

5.3 Project Task Schedule

In Table 13 in the appendix, there is a task chart that briefly explains the schedule that was followed while work on the project was in progress. Please note that there are two main phases of the task chart. The first, the proposal phase, lays a target time period for each task accomplished while working at Worcester Polytechnic Institute. The second, the fieldwork phase, is the portion of the project that took place on site, in Boston, Massachusetts.

5.4 Quantification of Attendance by College Students

The Marketing Services Group of John Snow Inc has measured college student attendance over the last 8 years. From Table 2 below, the total number of visitors who participated in the survey in 1993 was 2,321. In 1994, it was 2,806, in 1995 it was 2,339, and by 2000, it had dropped to 1,201. The Visitor Study breaks the demographics down by such variables as age group, first-time visitation, member and non-member status, etc. Attendance at the Museum of Science in Boston has been declining over the last few years according to *John Snow Inc*. The Boston Museum of Science has been looking for new marketing strategies with which to increase the number of college students in Boston who attend the museum. There is a substantial number of college undergraduates who could be attending the Museum of Science, but presently do not. This specific group of college students is the audience which we have tapped into, and whose interest we have attempted to stimulate.

	1993 Visitors (%)	1994 Visitors (%)	1995 Visitors (%)	1999/2000 Visitors (%)
Total # of Visitors	2321	2806	2339	1201
Gender				
Male 48		41	42	41
Female 52		59	58	59
Age (in years)				
18-24 10		8	10	14

Table 2: JSI Visitor Study Results

5.4.1 College Attendance at other Museums in Boston

In general, college student attendance at other museums in Boston, such as the Museum of Fine Arts, the Museum of Afro-American History, the Children's Museum, the Institute of Contemporary Art, and the Isabella Stewart Gardner Museum has remained constant, has not declined. This is in part due to the fact that non-technical museums, such as art museums,

change their exhibits more frequently than science museums. You'll notice that many of the exhibits that existed five years ago are still in place today. This information was obtained through talking to people in the Marketing department at the Museum of Science, as well as talking to Richard Greif, one of the directors at *JSI Inc.,* who conveyed to us that through their knowledge of having worked in this specific area of marketing for several years, these are trends his firm has seen.

5.4.2 College Attendance at other museums of science

College attendance at other museums of science around the region and the country tend to do better at attracting college students then the Boston Museum of Science. Boston is a major college-town, and a center of education, culture, and entertainment in the U.S. with considerably more opportunities than most cities. These opportunities draw away from the constant attendance other museums experience. Other cities that have science museums might lack the seemingly endless opportunities Boston has to offer, and therefore draw more students to the museums out of a lack of choices for entertainment and outgoing experiences. It is important to note that some museums (whether technical or not), do not track yearly attendance data. They track data monthly, which is not very accurate; (at least to the degree we could use these data).

5.4.3 Collection of New Attendance Data

Having very little pre-existing data to go off of, we made it our primary objective to obtain new data concerning college student attendance at the Boston Museum of Science. This allowed us to determine, whether or not the number of college students that attend the museum is actually declining, or just nearly nonexistent. We discovered that the number of college students that attend the museum is disproportionate to the total number of college students in Boston. From this realization, we proceeded to determine why these students do not attend and to develop strategies focused on attracting college students to the Museum of Science.

5.4.3.1 Method Overview/Objectives

Our primary method of obtaining these new data was to spend a considerable amount of time in the Boston Museum of Science counting college student attendees. This type of data collection was face-to-face, individual, and non-intrusive. Our objective was to track the number of students before they enter into any areas of the museum. Various Areas of the Museum of

Science include the Planetarium, the Omni Theater, and the Blue, Red and Green Wings of the Exhibit Halls.

5.4.3.2 Schedule

The schedule we adhered to involved spending a full week's worth of time at the museum counting college students. Members of our group spent all day at the museum tracking attendance and regulating data tabulation by 1-hour intervals. This way, we were able to analyze every section of the daily operating hours once the data was collected. We were able to analyze based on portions of hours, portions of days, days, the entire week (including the weekend), etc., and accurately assess attendance numbers.

5.4.3.3 Parameters

The only parameter during this portion of the project was whether or not the individual was a college student in Boston. If the student replied yes to the question they were tallied in the sheet below labeled Table 3.

5.4.3.4 Archival

New Attendance Data was archived to Excel spreadsheets and then converted to an Access database. All new Attendance Data was stored and compiled for analysis each week of the term, so that results could be checked for daily/weekly validity. Table 3 below illustrates the new attendance data storage sheet.

Table 3: Ticket Seller Survey

Ticket Seller Survey	
Date: / / 2001	
	# of College Students
9-10:00 AM	
10-11:00 AM	
11:00 AM -NOON	
NOON -1:00 PM	
1-2:00 PM	
2-3:00 PM	
3-4:00 PM	
4-5:00 PM	
6-7:00 PM	
7-8:00 PM	

5.4.4 Other Forms of Involvement of College Students at the Museum

College students (undergrad or graduate) can play another type of role at the Museum of Science, besides just a visitor. These students also have the opportunity to be interns at the Museum, which was actually what we worked as during our project time in Boston. At the time of our project the Museum of Science did not offer co-op opportunities for any students. The internship opportunities they offer commonly range anywhere from 3-12 months in length, and are unpaid positions that usually extend academic credit for the student at the institution he/she attends. Students work in areas of the Museum such as the Planetarium, the Library, the SunLab, the Children's Discovery Center, Collections, Exhibit Education, Exhibit Maintenance, HR, Media Relations, Marketing, Publications, and Sales and Operations. There are also volunteer opportunities within the Museum of Science whereby individuals (who are at least 14, and can commit 4-6 months of their time), are able to help out in various positions to make the Museum of Science run smoothly, and most importantly to bring education and science to life for the museum visitors.

5.4.4.1 I nternships

Some interns assist children in discovering the wonders of science; some catalog Museum collections; some develop support for existing exhibits; others prepare and evaluate existing educational materials, and others draft and edit print projects. Interns greatly assist the main staff at the museum in furthering education and science in the minds of those who attend by broadening their horizons about what has happened in the past, what is happening in the present, and what is possible in the future

5.4.4.2 Quantify with existing data

Information about work opportunities can be found at the Boston Museum of Science's web page at the following link: http://www.mos.org/info/intern.html. The actual number of interns at any given time at the Museum is always changing, though we are under the impression from our liaison, Suki Abbatiello, that during the summer there are more interns because colleges are not in full sessions.

5.5 Exploration of Level of Interest for the Museum of Science

Our main objective of this section was to determine the extent that college students were actually interested in the Museum of Science and the exhibits/shows it has to offer. To obtain

this information, we surveyed college students both at the Museum of Science in Boston, as well as on college campuses in Greater Boston. Our method of collection was intended to be as simple as possible, and as always, non-intrusive.

5.5.1 Target Area

Our target area for the level of interest of college students is strictly Boston. This is a confined parameter. We surveyed colleges in Boston within a 10-mile diameter from the Museum of Science.

Table 4: Undergraduate Populations of Sample Colleges in Boston

Institution	Undergrad Population	Sample Size
Bentley College (Waltham)	3600	29
Berklee College of Music	3400	28
Boston College	8000	66
Boston University	15000	122
Brandeis University (Danvers)	3000	24
Bunker Hill Community College	6220	54
Emerson College	2800	23
Emmanuel College	650	5
Harvard University	6684	54
Lesley University	550	4
Massachusetts College of Art	1400	11
Massachusetts Institute of Technology	4500	36
Northeastern University	13671	111
Simmons College	1300	11
Suffolk University	3000	24
Tufts University	4800	39
Umass Boston	10442	85
Wentworth Institute of Technology	3225	26
Total Population	**92242 752**	

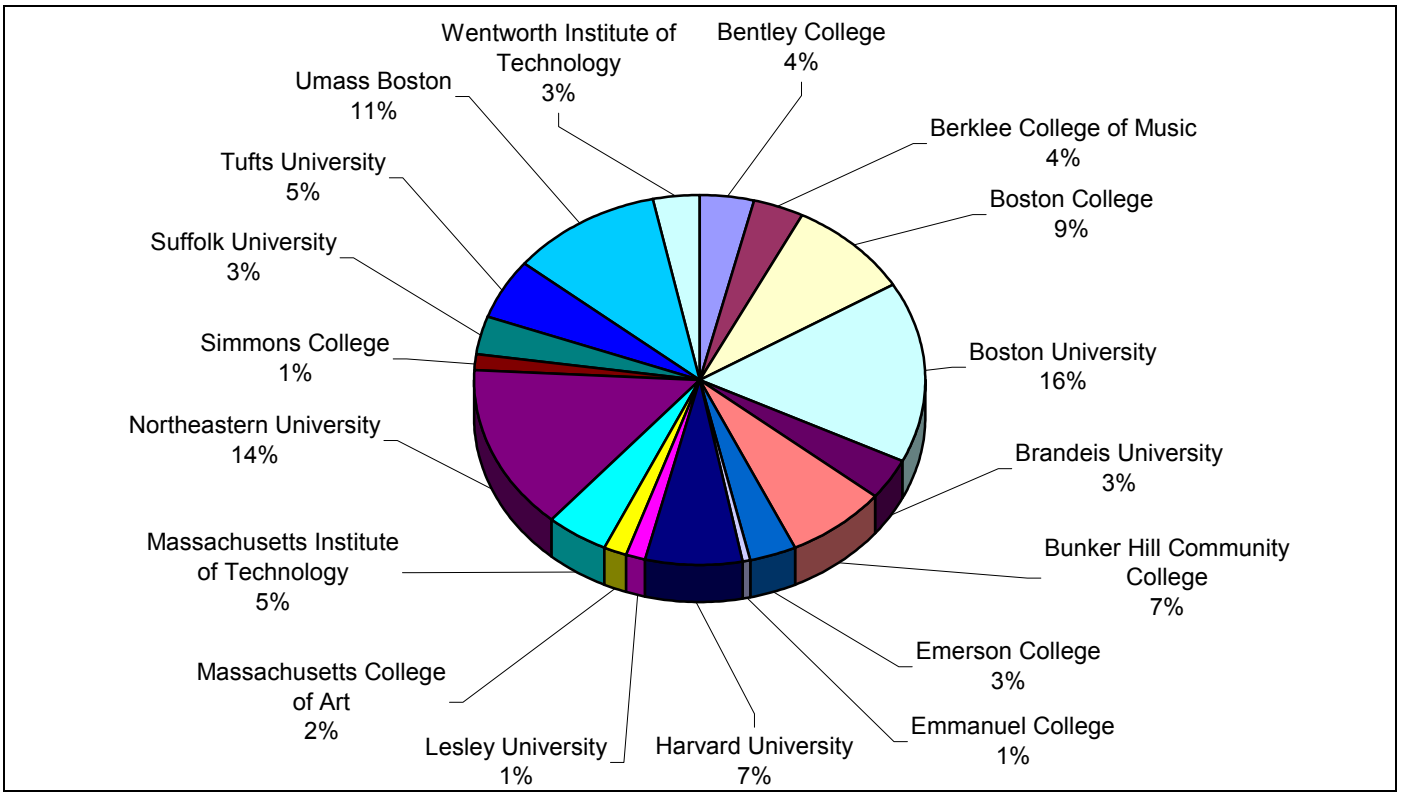

Figure 8: Percentage of total survey from each college (N=752 students)

5.5.1.1 Boston Area Colleges

Many colleges in Boston are strictly technical or have a technical aspect to them – one whereby the students could appreciate the engineering and science base that serves as the foundation for the Museum of Science. However, students at Boston area colleges also have a perspective on the arts and culture that would allow one at a non-technical college or university to realize the value of such a museum. Therefore, when we determined our sample size, we carefully selected schools that accurately represented the correct proportions of students by major and gender. To do this we chose schools within the Boston area that gave a diverse cross-section of the college student population.

5.5.1.2 Public Transportation Access

Students right in Boston can ride the "T" from almost anywhere, and it costs only $1 each way, (though a little more for inbound travel from out near the edge of the lines). Location is not usually a considerable problem for students at colleges in the Boston area. The public transportation in Boston is considerably cheaper and less of a hassle than driving in the city. Currently the Museum of Science only validates parking if you work at the Museum. Therefore

there is an added cost associated with driving to the Museum and this may be a source of why students are reluctant to attend.

5.5.2 Sur vey Instrument(s)

The survey instruments used during our project work included pens, clipboards, and mini-cassette recorders to tape-record conversations for both focus groups, on-campus interviews, and interviews within the Museum of Science.

5.5.2.1 Objectives of Surveys

Surveying was conducted to determine the level of interest of college students for the Museum of Science. From the responses of those interviewed, we determined how interested college students were in the Museum. We were also able to determine what attracts college students to the Museum, what would attract college students to the Museum, and if college students would return to the Museum of Science. To accomplish these goals we used two types of surveys. Each of the surveys had a specific purpose and is explained in detail below.

5.5.2.1.1 Museum of Science Internal Surveying

The first type of surveying that was conducted, took place in the Museum of Science. We referred to this survey as the internal survey throughout our project. The internal surveys goal was to evaluate the interest of the college students who attended the Museum. By examining the students who visited the museum we were able to obtain valuable information on why the students came to the Museum, what areas of the museum were appealing, and any suggestions they would have for improvements to the museum and its organization.

5.5.2.1.2 On-Campus Surveying

This survey was administered on campuses around Boston with the goal of determining the level of interest in college students for the Museum of Science. From the data collected we were also able to determine the level of awareness for the Museum. An underlying goal of this method was to find students on campuses and figure out why they do not attend the museum then examine how to attract them to the museum. From this survey we also answered important questions about frequency of visitation, likes and dislikes, suggestions for improvement, and what incentives would attract them to return as well as limiting factors that act as restraints for students coming to the Museum.

5.5.2.2 Sampling Method

For internal surveying, our method was to survey every person that was of college-age in the Museum, this gave us an accurate representation of the college-age individuals who attend the Museum.

On college campuses, we surveyed every fifth person, so as not to be prejudiced in any way, such as by gender, race, etc. We also contacted each college and university prior to surveying to establish the male/female ratio so after each half hour, we could tabulate our results and verify we were not biasing by gender.

5.5.2.2.1 Sample Size Determination (External Survey)

This section describes the method that was used to ensure statistical validity in our surveying of college students on campuses. We wanted to conduct enough surveys to make our results legitimate while staying within the limiting factors of our project, such as, time, resources and manpower.

We began by analyzing the true population proportion of college students, *p.* After careful analysis we determined that for the purpose of this project (and to make the results more accurate) we could assume that the population of college students in Boston is infinite. By assuming a larger population than there is in reality our sample size is increased and our error is decreased. Since we are no longer using the true population proportion, *p*, we can now use the upper bound of 0.25 in place of the expression: $p(1-p)$. Assuming the standard normal density model for our data we decided on a 95% confidence interval* ($^{+}$/- 3 percentage points). According to the standard normal density description of z, as a statistic, we find that $z_{0.95}=1.645$. Using the following formula we determined our sample size to be 752 students.

$$n = \frac{(.25)(1.645)^2}{(.03)^2} = \underline{\underline{752}}$$

Figure 9: Equation for Sample Size Determination

5.5.2.3 Scheduling of Surveys

As a cohesive group, we narrowed the thirty-five institutions of higher learning in the Boston Metropolitan Area, down to eighteen. Due to the time constraints of the project we decided to concentrate our efforts on an accurate and diverse sample with a smaller, more concise, number of colleges. The colleges we chose were mostly large in size and contained a very diverse population. We added schools that had a theme associated with the school so that

we could analyze how the Museum of Science appeals to different types of schools and its students. For example, the Berklee College of Music enrolls students with a partiality towards music and the Massachusetts College of Art enrolls undergraduates with an inclination towards the fine arts (both of these schools were chosen for our study).

In order to enter each campus to conduct our survey, we had to obtain permission from the correct resources on campus. Finding the correct office in which to acquire permission was an arduous task. One team member called each school to establish the necessary contact to obtain permission to survey on each college campus.

Once contact was established, most schools were emphatically interested in our study and receptive to our needs. We sent faxes to every school that asked for more information concerning who we are and what we hoped to accomplish. Along with an information sheet explaining our study, we sent an exact copy of the external survey in case an administrator of any school had any comments and also so they could see the tone and intentions of our inquiry.

We completed our individual campus visits on a single day within a time period of three weeks for no longer than a few hours. We conducted our surveys in an area of each campus where students tend to congregate, for instance, a campus center or lobby of a main building.

For the Museum of Science itself, we surveyed students as they left the museum rather than right before they entered. By waiting until after the visitors left the museum we were able to observe visitors comment on what they liked and disliked (of what they saw), as well as what else they would like to see. This was not as easy for college students on campuses, who either had not been to the museum in a while, or did not get to spend a lot of time there.

5.5.2.4 Questions/Parameters

There were certain parameters for surveying to determine interest level: how interested are the students in the museum of science, how often do they go, what do they like about it, what don't they like about it, what would they add, what incentives would make them go more often, would a collaboration between different museums in Boston make them go more often, etc. To see an example of the survey that was used to determine the level of interest please look in the appendix.

5.5.2.5 Coding /Archival

All these questions were answered during the one-minute survey, recorded, and later coded and entered into an excel spreadsheet and converted to an access database.

5.5.2.6 Survey Analysis

Analysis of these surveys was performed to establish overall trends in interest levels of students, and what they liked most and disliked the most about the exhibits/shows. All data was ultimately coded into an access database so that we could run queries on any interest level factor, based on any variable such as age, college attended, major, gender, etc. For further information on the results and analysis of these surveys please see the results section of this report.

5.6 Assessment of Museum of Science Marketing Strategies

Interviews with important museum directors from the Public Relations, Marketing, Finance and Media departments proved useful for understanding what strategies the Museum of Science uses to attract college students. From these interviews, along with the data we collected concerning numbers of students and their interest level, we were able to propose new strategies and useful insight on how to approach marketing to a demographic that could be a potentially significant portion of attendance for the Museum.

5.6.1 General Marketing Strategies

The Boston Museum of Science relies on the media for most of their marketing strategy. They market using mostly newspapers, radio and television stations, web sites, direct mail, school announcements, and travel brochures. The Museum of Science is known for focusing much of their marketing efforts towards parents who are usually the ones who bring their children into the museums. As well as marketing to parents, the Museum of Science also targets school systems because they often bring students on field trips to seek a fun and educational experience.

The Boston Museum of Science has been a landmark located at Science Park for 60 years. For this reason, people tend to know about the Museum and what it has to offer. Adults bring children or friends to the Museum because it is an interesting experience that will entertain generations to come. Information about the Museum of Science's general marketing strategies and Museum operations was collected through interviews with the following people: Vice-President of Marketing, Director of Exhibits, Vice President of Programs; and Manager of Public Relations.

5.6.2 Strategies Specifically Directed to College Students

The Boston Museum of Science has never had a specific marketing program aimed at college students. However, in recent years, an annual College Night has been hosted by the Museum. During these college nights, the only information collected about student visitors was which college they attend. For this reason, information about marketing strategies directed to college students was collected through a focus group with college students, interviews with college students in the Museum, and research about marketing programs other museums used to attract college students.

5.6.3 Identification of Marketing Guidelines with Interviews

5.6.3.1 Overview of Method(s)

We interviewed Ms. Cynthia Mackey, the Vice President of the Marketing Division at the Museum of Science, to understand the general marketing strategies and how they direct these to college students. This interview took place on March 29th at 9:00 a.m. Larry Bell, the Director of Exhibits, was interviewed on March 20th at 2:00 p.m. Important information about how exhibits were selected in the past and how they are selected now was obtained. Cary Sneider, the Vice President of Programs, was interviewed on March 23rd art 1:30 p.m. Mr. Sneider provided information about how the Museum of Science selects their programs and presentations. Lastly, Carole McFall was interviewed on March 29th at 11:00 a.m. She works in Public Relations at the Museum of Science and informed us about the College Night that the Museum holds once a year.

Once the Museum's marketing strategies were understood, we searched for college students in the Museum during the second and third weeks of our project work. (which are the weeks of March 26 and April 2), to conduct face-to-face interviews. We asked college students, in the Museums, simple questions about how they heard and why they came to the museum.

5.6.3.2 Interview objectives

The objective of the interview with Ms. Cynthia Mackey, the Vice President of the marketing division at The Museum of Science, is to understand how the Museum markets so we know if the techniques are reaching college students. Understanding the marketing strategies allowed us to interview college students with knowledge about how the Museum specifically tries to target college students. This knowledge served as a basis to make recommendations.

Also, interviews with staff members of the Museum provided us with a better understanding of how the Museum operates.

The objective of interviewing college students in the Museum of Science is to identify the extent to which the marketing techniques, used by the Museum are working. Also, these interviews are important because they prove that some marketing techniques work because these college students will be in the Museum when interviewed.

5.6.3.3 Schedule and Target

These interviews with college students took place after the second week (March 26th) of our project work. College students in the Museum were targeted to answer questions. They were approached if they appeared to be college students and were offered incentives to answer interview questions.

5.6.3.4 I nterview Analysis

The interview with Ms. Cynthia Mackey was a good way to understand how the Museum markets in general and how they direct their strategies to college students. Knowledge of this information allowed us to make recommendations to build on the marketing strategies currently used by the Museum of Science. Interviews with Larry Bell, Director of Exhibits, Cay Sneider, Vice President of Programs, and Carole McFall, Public Relations, all helped us to understand how the Museum of Science selects exhibits and how the annual college night is organized.

The interviews with college students in the Museum provided us with what was working with the marketing strategies as well as what was not working. Also, recommendations about exhibits and/or attractions as well as information about where else college students go, was extracted from the interviews. This information was archived in Access databases and Excel spreadsheets.

5.6.4 Assessment of Marketing Effectiveness

5.6.4.1 Evaluation of results attributable to marketing

We reviewed three primary data sources that exist for the visitor studies pertaining to the Boston Museum of Science. A marketing service group called JSI conducted the following studies: Attitude and Awareness Study, which was finalized on January 20, 2000; The Final

Report – 1999 / 2000 Visitor Study, which was finalized on October 19, 1998. The OMNI Theater – Everest Study

We studied the results of marketing techniques at the Exploratorium, the Center of Science and Industry in Toledo, Ohio, and the Franklin Institute Science Center in Philadelphia, PA around the Boston area, we studied the Museum of Fine Arts and the Isabella Steward Gardner Museum. We determined facts about how these museums have implemented a focus on attracting more college students. We contacted marketing departments the museums around the country and Boston area and obtained information about their marketing programs by telephone interview. We asked for attendance data if available and more importantly, marketing information about strategies directed to attracting college students to their museums.

The *JSI Inc*. Attitude and Awareness Study used telemarketing with a survey instrument to find out people's interest in specific exhibits and the Museum of Science's competition in the Boston Area. The Final Report – 1999 / 2000 Visitor Study describes a visitor study of people who attended the Museum of Science, categorized people, and shows that few people are in the 18 – 22 year old category. The OMNI Everest Study was aimed at everyone who saw Everest at the Mugar OMNI Theater. The study analyzed how many people attended, and from what background they came.

5.6.4.2 Objectives of evaluation of results

The objective of evaluating the results of recent studies and marketing techniques was to provide appropriate information about assessing what visitors in the past enjoyed as well as what other attractions the Museum has as competition. Knowing information about these studies and marketing techniques other science museums have used to attract college students will help us make recommendations. Previous studies served as a benchmark for comparisons drawn between our data and JSI's data.

5.6.4.3 Schedule

The first two weeks of our work in Boston (up until March 26th) was devoted to collecting marketing information from other museums in the Boston area and around the country. Also, during this period of time, we reviewed the visitor studies further to understand the Boston Museum of Science's marketing strategies.

5.6.4.4 Evaluation of Results Analysis

Once the visitor studies were read through and the appropriate museums were contacted, we sorted through the information and formed recommendations in the form of a report and presentation. Evaluation of visitor studies and marketing results allowed us to understand how well different strategies work. Also, it revealed what marketing techniques did not work for museums. This information was presented in the form of an evaluation summary.

6 Resul ts and Analysis

The following sections provide the results of our data collection. Included within this chapter are the results from each of the first three objectives:

1) Quantification of College Students who attend the Museum of Science
2) Determination of Level of Interest of College Students for the Museum of Science
3) Assessment of the Museum of Science's Marketing Techniques

6.1 Quantification of Attendance

As recorded earlier in this paper in Table 1 on page 4-35, Boston contains approximately one hundred thirty-five thousand college students. We tapped into this source by directly surveying students on campuses around the city. We discovered possible reasons that college students are not attending the museum in large numbers and what might attract them to attend in the future. Later, we make recommendations on how to attract more of these students to the museum.

We surveyed inside the Museum of Science on the days of Sunday April 8th, Monday April 9th, Thursday April 12th, and Saturday April 14th, recording the number of college students who entered any portion of the museum. We also obtained actual Museum of Science attendance data from Phil DeStefano, the visitor data specialist at the Museum, whose reports show the number of adults, senior citizens, and children who attend the museum by day, week, month, and year. By knowing the number of adults who go through the museum on any given day, and how many college students were present that day, we can then estimate the average college student percent attendance on a daily basis. From the daily data estimates, and the actual data figures, we were able to extrapolate data for entire weeks, months, and years. By using this system, we extrapolated data for the week of April 9-15, 2001. After analyzing the attendance for the month of April for the past 5 years, we were able to make realistic attendance estimates for the remainder of April, 2001. With the data now available for April, 2001, we then used past yearly attendance data to estimate the total college student attendance for the year 2001. Table 5 shows the average percentage of college students visiting the museum on the days that surveys were conducted.

Table 5: Museum of Science Internal Survey Data & Average Percentage

Day of Week	College Attendance	Adult Attendance	Percentage
Sunday 198		5051	3.92
Monday 50		1059	4.72
Thursday 79		2340	3.38
Saturday 246		6469	3.80
		Average Percentage	3.96

Table 6 below shows the adult attendance data obtained for the week of April 9 to April 15th, 2001, and also the extrapolated estimation for the number of college students visiting the Museum of Science that week. This table also shows the estimated adult and college student attendance data for the entire month of April, 2001. Similarly, we estimated the college-student attendance data for the Museum of Science for the entire year. The estimated value of 1,086,686 adult attendees in the Fiscal Year of 2001 is remarkably close to the actual attendance figure for the Fiscal Year of 2000 of 1,095,500 adult attendees. By analyzing the attendance figures over the last 5 years we realized that adult attendance does not fluctuate more than +/- 5% year by year. Our estimate of 1,086,686 for FY'01 has an error of 0.80% from the actual value of the prior year. Our results were within the expected error range and for the purpose of this preliminary project can be assumed to be correct. Since we knew that the adult attendance data is correct, we then could extrapolate appropriately based on these data.

Table 6: Museum of Science Estimated Adult & College Student Attendance

Data for Week of April 9-14	Adult Attendance	Estimated College Attendance
	21130 836	
Data for Month of April	Estimated Adult Attendance	Estimated College Attendance
	90557 3582	
Data for Year of 2001	Estimated Adult Attendance	Estimated College Attendance
	1086686 2865	3

Table 7 below shows the total yearly attendance for the Museum of Fine Arts, and the total college student attendance number. This college student number is broken down into those students who go to a college affiliated with the Museum of Fine Arts (who get into the MFA free), those from the School of the Museum of Fine Arts, and those who pay for admission (who get a $2 discount off the $12 admission price).

Table 7: Total & College Student Attendance at the Museum of Fine Arts

	Total Attendance	College Student	University Members	School of the MFA	# of Students who Pay
Museum of Fine Arts	1.4 million	112,648	75,624	5482	30,542

Table 8: Attendance Data for Museums around the US

Museums Loc	ation	Annual Attendance FY'00	College Student Attendance*
Exploratorium	San Francisco, CA	600,000	20,000
California Science Center	Los Angeles, CA	1,270,840	X
Franklin Institute	Philadelphia, PA	728,394	X
Museum of Science and Industry	Chicago, IL	2,178,569	X
Center of Science and Industry	Toledo, OH	787,395	X
Museum of Science	Boston, MA	1,556,505	28,653
Museum of Fine Arts	Boston, MA	1,400,000	112,648
New England Aquarium	Boston, MA	1,300,000	X

* Note: An "X" indicates no college student attendance value was available

In comparison, the Museum of Fine Arts and the Boston Museum of Science are at opposite ends of the spectrum in terms of attracting college students. College student attendance for the Museum of Fine Arts last year was 112,648; for the Boston Museum of Science the prediction is vastly different at only 28,653 students. When looking at the college attendees at both Museums and comparing the amount who paid, we see that the Museum of Fine Arts brings in 1889 more paying college students per year than the Museum of Science. These numbers are comparable and discrepancies between the values can be directly related to the extrapolation of the Museum of Science data.

6.2 Level of Interest Study

By surveying internally during the week and on the weekends, as well as reviewing actual Museum of Science attendance data, we determined that the Museum is not attracting college students as well as they could. The results in this section help to provide answers for the question, "Are college students interested in the museum?" In addition to answering this simple yes or no question, we also provide reasoning as to what aspects of the Museum interest students the most and what portions need improvement to attract a significant college audience.

6.2.1 Internal Level of Interest Results

This section of the results chapter contains qualitative comments on documented trends that were recorded when internal surveys were administered. This section does not provide quantitative data on the raw numbers that were recorded because the sample size that was surveyed was small compared to the total college population. Since the error would be large in doing a quantitative analysis of the data collected, it was decided that anecdotal comments would be the best method of presenting this data. The following section contains the anecdotal results of our internal surveys.

Our data suggests that the most common method by which college age students find out about the Museum of Science is from their friends and/or family. Therefore, word of mouth is a great avenue by which to make college students aware of the offerings of the Museum. College students also mentioned that they see articles or advertisements in local and major newspapers. When we asked which newspapers students use to obtain event information, the *Boston Phoenix* and the *Boston Globe* were most commonly mentioned. When we asked the students specific questions about which sections of the newspapers they used most, the majority stated that the "Calendar" segment was the most useful.

Of the college students who were surveyed, most used public transportation (i.e. the MBTA) to travel to the Museum of Science. Sixty percent of these students had previously visited the Museum of Science within the past two years. Of this sixty percent, only a small percentage had visited the OMNI Theater on the day of surveying. When the surveyor asked why the students had not attended the OMNI Theater on that day, the most common responses were:

- Didn't have enough money to visit both the Exhibit Halls and the Omni Theater Shows
- Didn't have enough time to visit all the Museum of Science has to offer in one day

A large number of college students who attended the museum liked the Virtual Fish Tank, Lightning Shows, OMNI Theater and the Math and Physics exhibits the most. These aspects of the museum seemed to stick out in the visitors' minds as they left the museum. This is important because an exhibit that appeals and holds some lasting impression will have a positive effect for the Museum of Science.

When prompted about specific OMNI shows that students visited, we asked if any of them appealed to their age group. Most who saw "T-Rex," a film about dinosaurs, thought that it was targeted to please a children's audience and not a college student. However, "Shackleton's

Antarctic Adventure," arguably the greatest survival story of all time, received many good remarks from college students because the subject matter was on a more mature level. College students often stated this particular presentation held them in suspense and captivated the viewing audience. College students enjoyed the "Mysteries of Egypt" because of its accurate portrayal of Egyptian culture. They also liked that the film touched on the religious beliefs of the Egyptian people. During our time surveying college attendees at the Museum of Science we noticed a significant trend that more college students enjoy OMNI presentations that are geared towards mature audiences.

One of the main results discovered from our internal surveying was that more college students visited the Museum of Science during the weekends. This fact is not surprising because, on the weekends, students find it easier to take a break from their busy school schedules and heavy workloads so they can take some time to explore what Boston has to offer. The following section contains a detailed description of the external surveys that were conducted on college campuses throughout the course of the project.

6.2.2 External Level of Interest Results

The results of the external level of interest survey provided quantitative data on the overall college student opinion of the Museum of Science. These results are provided in detail in this section

Figure 10 on the following page represents the number of college students who were surveyed in each of the three basic areas of study.

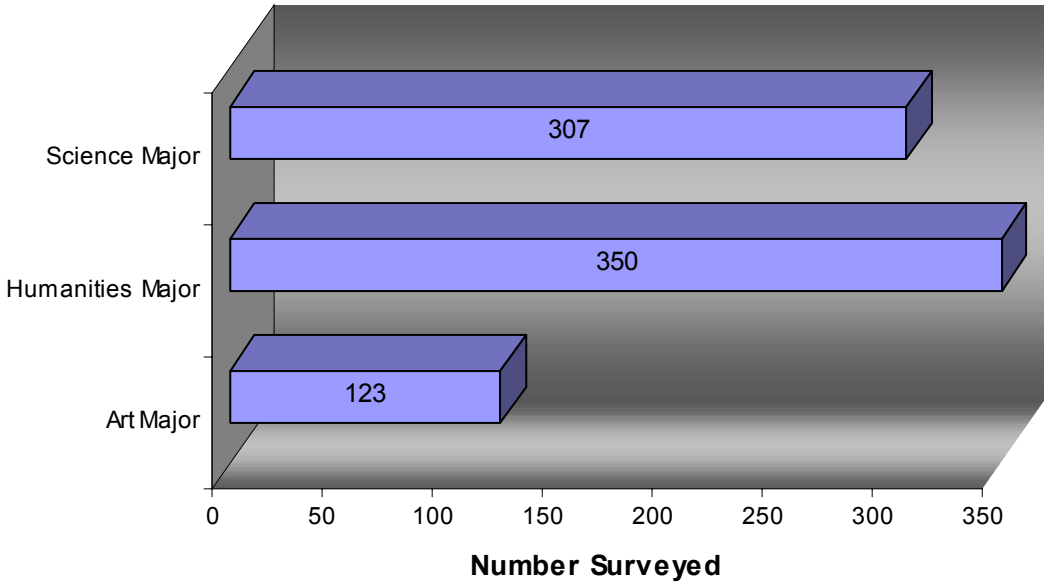

Figure 10: Majors Surveyed (N=780 students)

The majors were broken down into three categories: Humanities, Arts, and Science. The schools in Boston that were selected for surveying had larger numbers of students with Humanities majors than either Science or Art majors. This factor provides an explanation for why the number of Arts majors is considerably lower than the number of Science and Humanities majors. Since our sampling method was completely random and our surveying sites were located at positions where a diverse group of students were located, our results are statistically valid.

Figure 11 outlines the percentages of the total survey of college students who were in each of the areas of study.

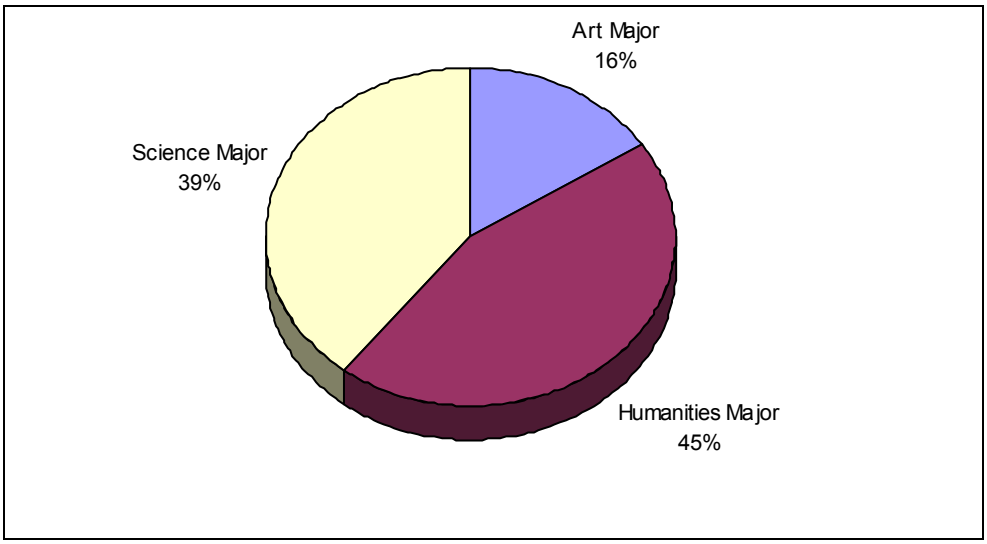

Figure 11: Percentages of Majors within Survey (N=780 students)

Figure 11 depicts the percentage of college students pursuing each major. Of all students surveyed, across 18 campuses, 45% majored in Humanities, 39% in a Science discipline, and 16% in Art.

Figure 12 depicts the number of students who have visited various cultural attractions in the Boston Metropolitan Area.

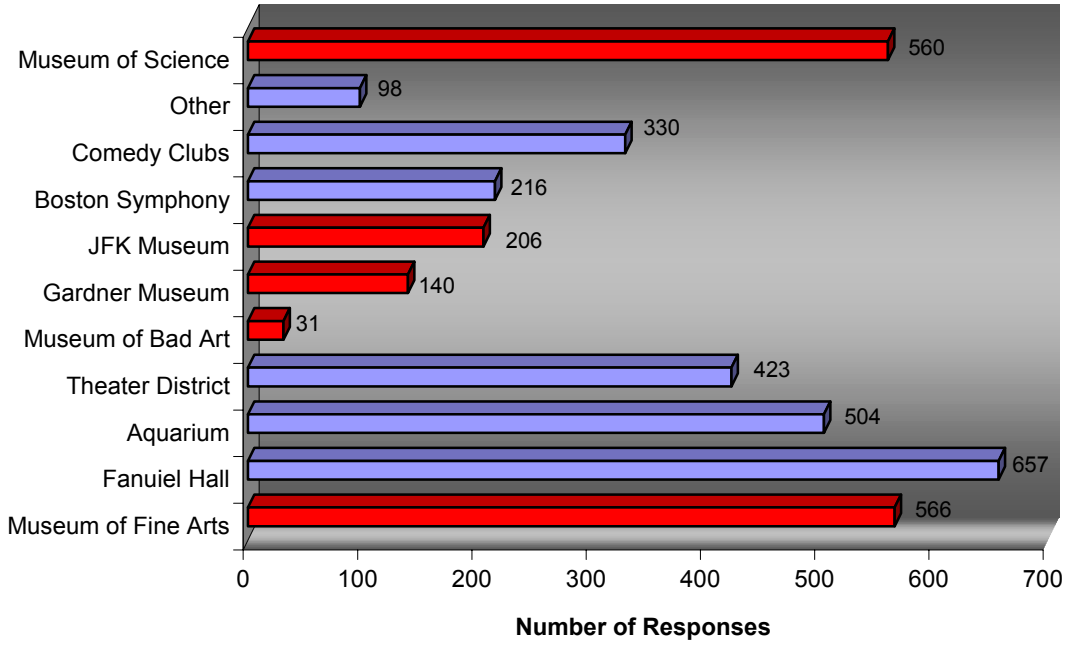

Figure 12: Cultural Visitation in Boston (N=780 students)

The attractions included in this graph are: the Museum of Science, the Museum of Fine Arts, Fanuiel Hall, the New England Aquarium, Boston's Theater District, the Museum of Bad Art, the Isabella Stewart Gardner Museum, the John F. Kennedy Museum, Boston Symphony Orchestra, various comedy clubs, and other attractions that the person who was surveyed could offer. 76%, or 657 of the 780 students surveyed had visited Faneuil Hall. As you can see above, the cultural attractions that are museums are highlighted in red. In terms of other Museum attendance within Boston, the Museum of Science had the second most visitors within our survey. The Museum of Fine Arts and the Museum of Science had 566 and 560 college student visitors, respectively. Both the Theatre District and the New England Aquarium were close with about 50%-60% respectively, of students surveyed, having visited their museums.

Figure 13, below, depicts the percentage of students who have visited various cultural attractions in the Boston Metropolitan Area.

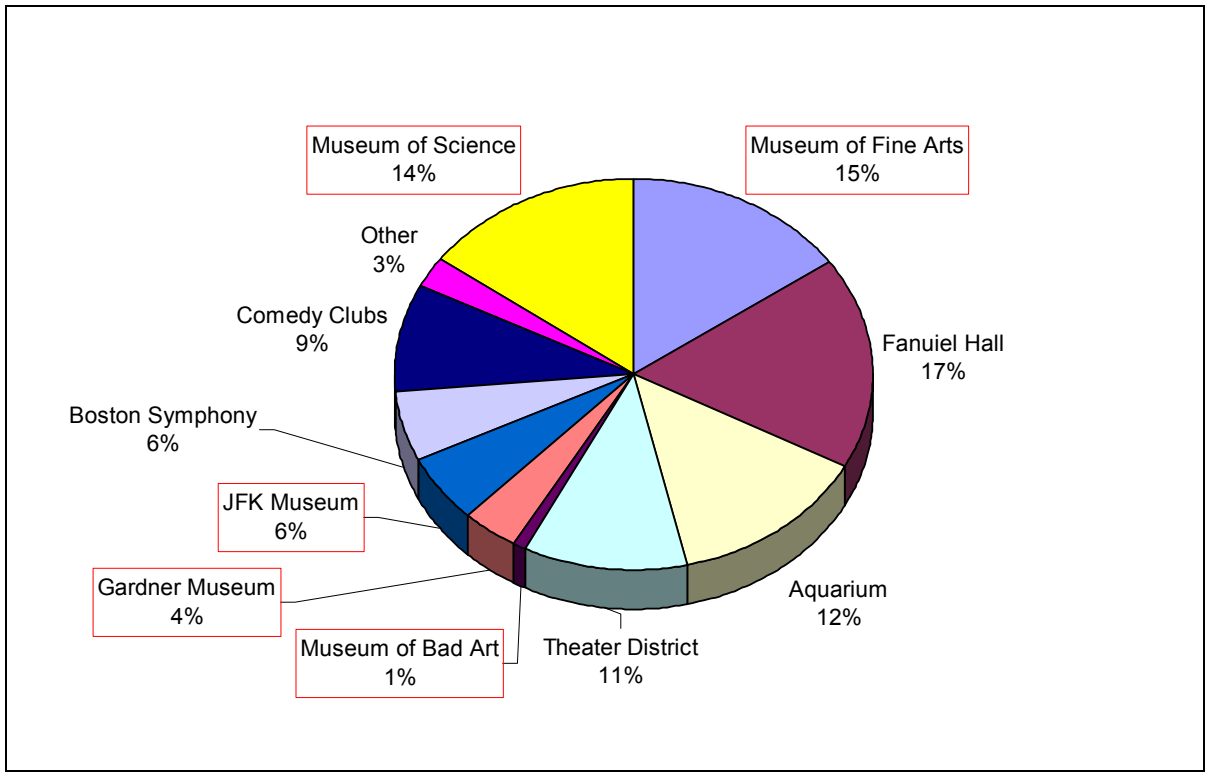

Figure 13: Cultural Visitation in Boston (N=780 students)

Figure 13 displays the following attractions: the Museum of Fine Arts, Fanuiel Hall, the New England Aquarium, Boston's Theater District, the Museum of Bad Art, the Isabella Stewart Gardner Museum, the John F. Kennedy Museum, Boston Symphony Orchestra, various comedy

clubs, and other miscellaneous attractions. 17% of the total number of responses indicated having visiting Faneuil Hall. The Museum of Fine Arts and the Museum of Science each had 15% visitation and the New England Aquarium and the Theatre District had 13% and 12% visitation respectively. The other museums had nominal visitation by the students we surveyed.

Figure 14 depicts the percentage of students who had been to the Museum of Science in the past.

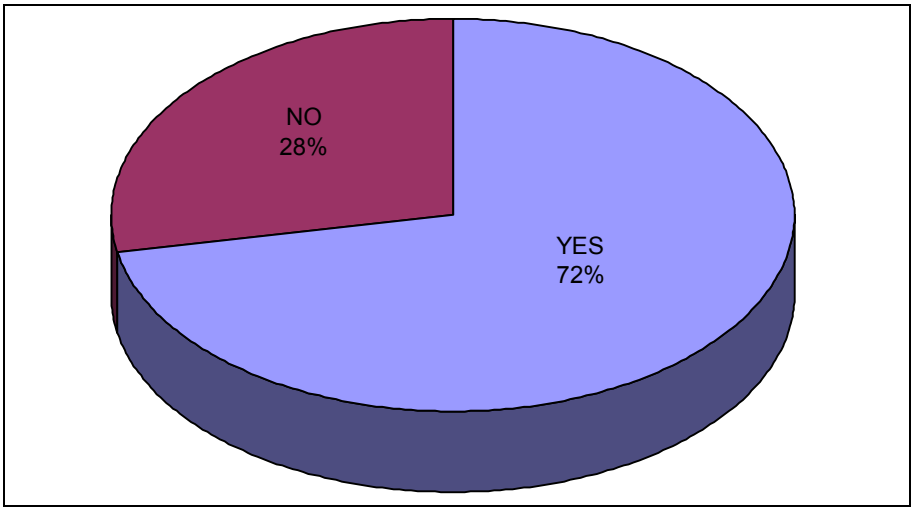

Figure 14: Previous Visit to the Museum of Science (N=780 students)

Seventy-two percent of the college students who were surveyed had previously been to the Museum of Science. Twenty eight percent of the college students who were surveyed had not previously been to the Museum of Science.

Figure 15, on page 6-64, shows the length of time since the previous visit to the Museum of Science.

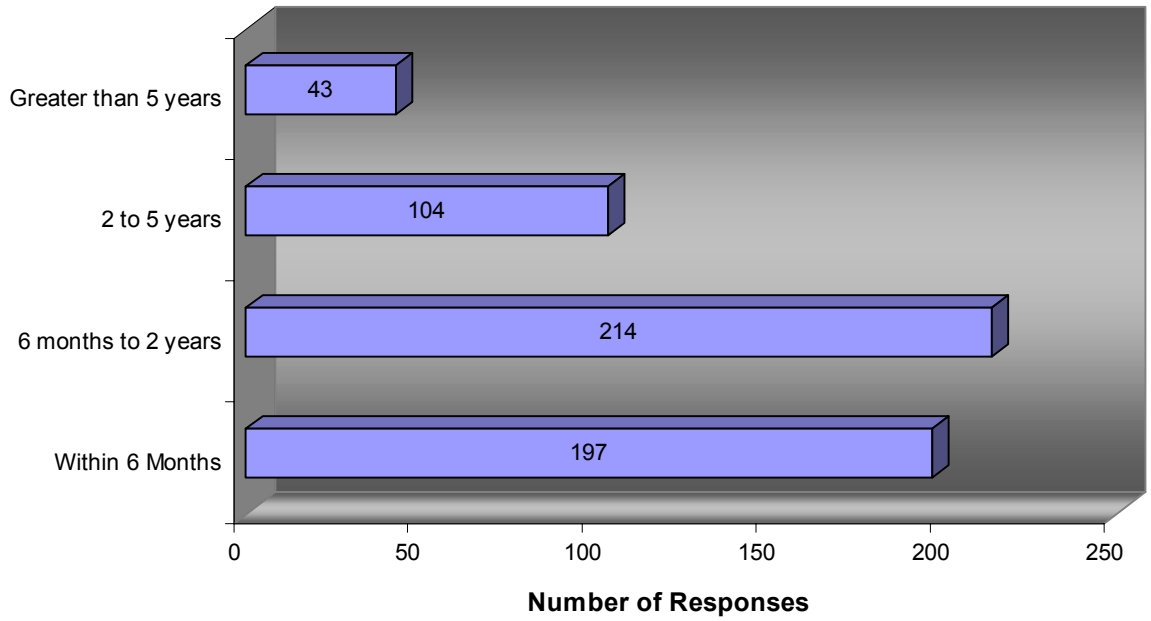

Figure 15: Last Visit (N=780 students)

Most students surveyed who had been to the Museum of Science before had been either in the last 6 months, or between 6 months and 2 years. The number of responses is almost equal between these two timeframes. The number of responses drops almost linearly from those timeframes, moving into the 2 to 5 year block, and then continues downward to the greater than 5 year timeframe.

Figure 16, shows the percentage of students who visited the museum previously in one of the time intervals noted in the pie graph.

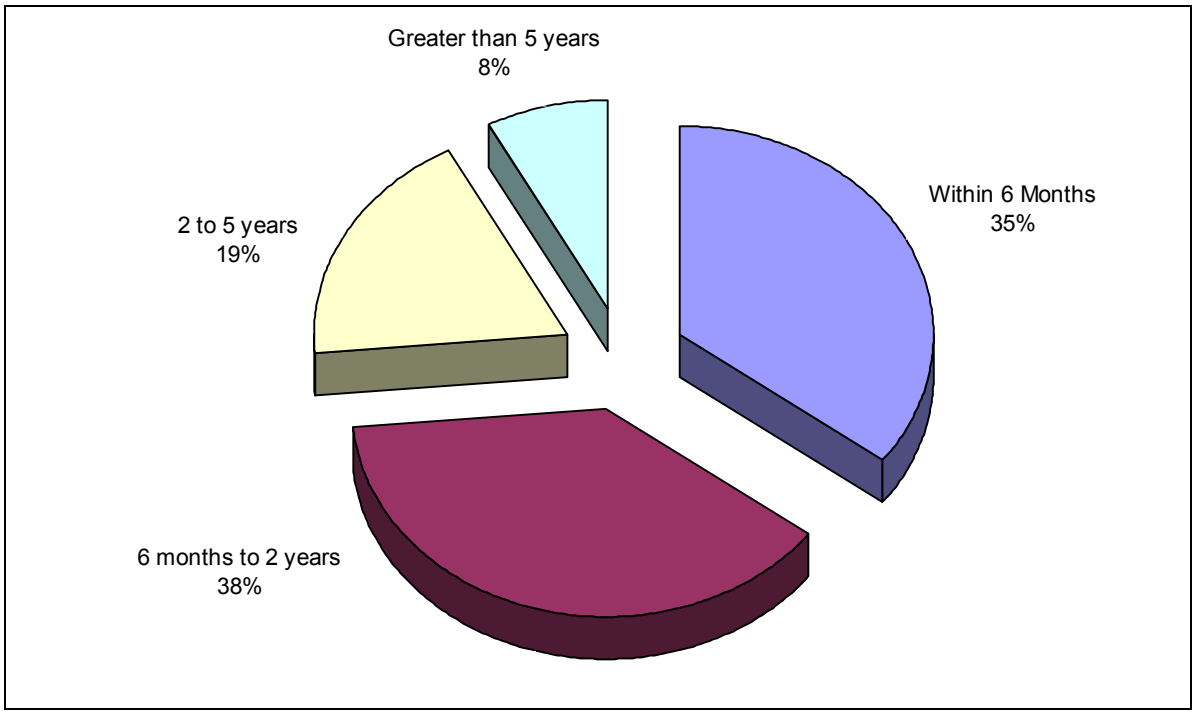

Figure 16: Last Visit (N=780 students)

73% of college students surveyed have been to the Museum of Science in the past 2 years. 19% have been to the Museum of Science in the past 2 to 5 years, and only 8% have been to the Museum of Science longer than 5 years ago.

Figure 17, on page 6-66, displays how often students attend the Museum of Science.

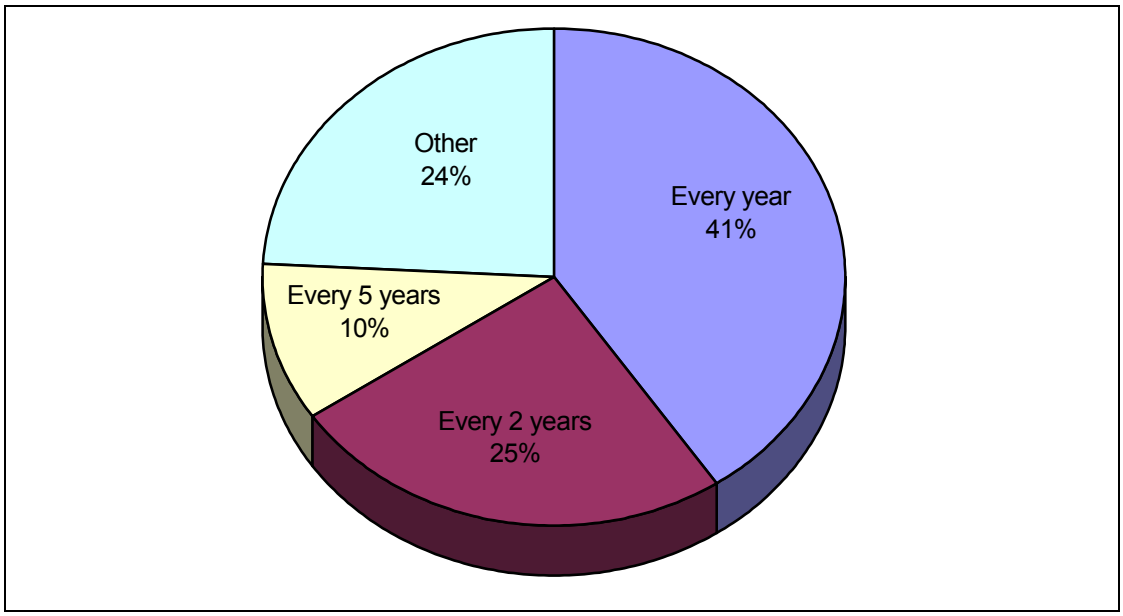

Figure 17: Frequency of Visits (N=780 students)

41% of those students surveyed have been to the Museum of Science every year. 25% have been to the Museum of Science every 2 years, and 10% have been to the Museum of Science every 5 years. The other 24% is accounted for by the students who have been to the Museum before, but either have been only once, don't remember, or its been too long for them to remember.

Figure 18 illustrates whether or not a student would make a return visit to the Museum of Science.

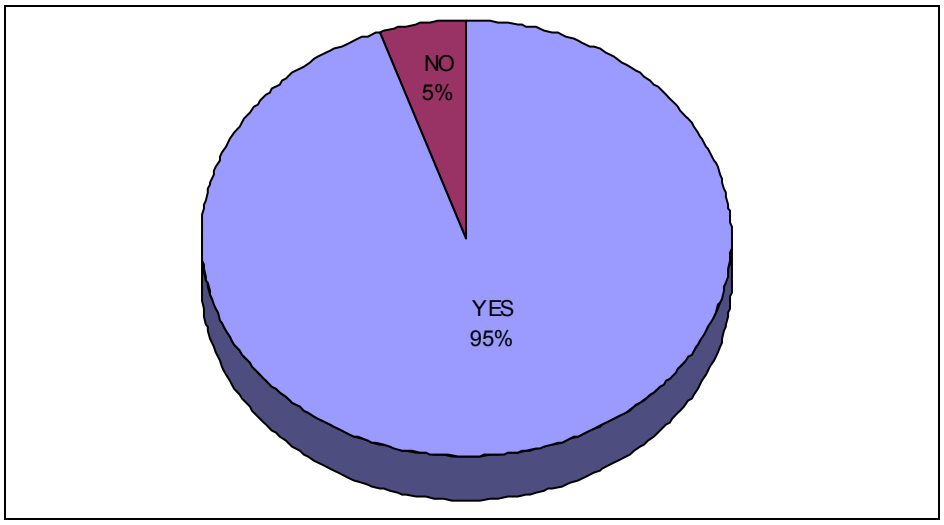

Figure 18: Percent of Visitors who would return

96% of college students surveyed would return to the Museum of Science in the future, while 4% said they would not return.

Figure 19 illustrates areas of student interest in particular aspects of the Museum of Science.

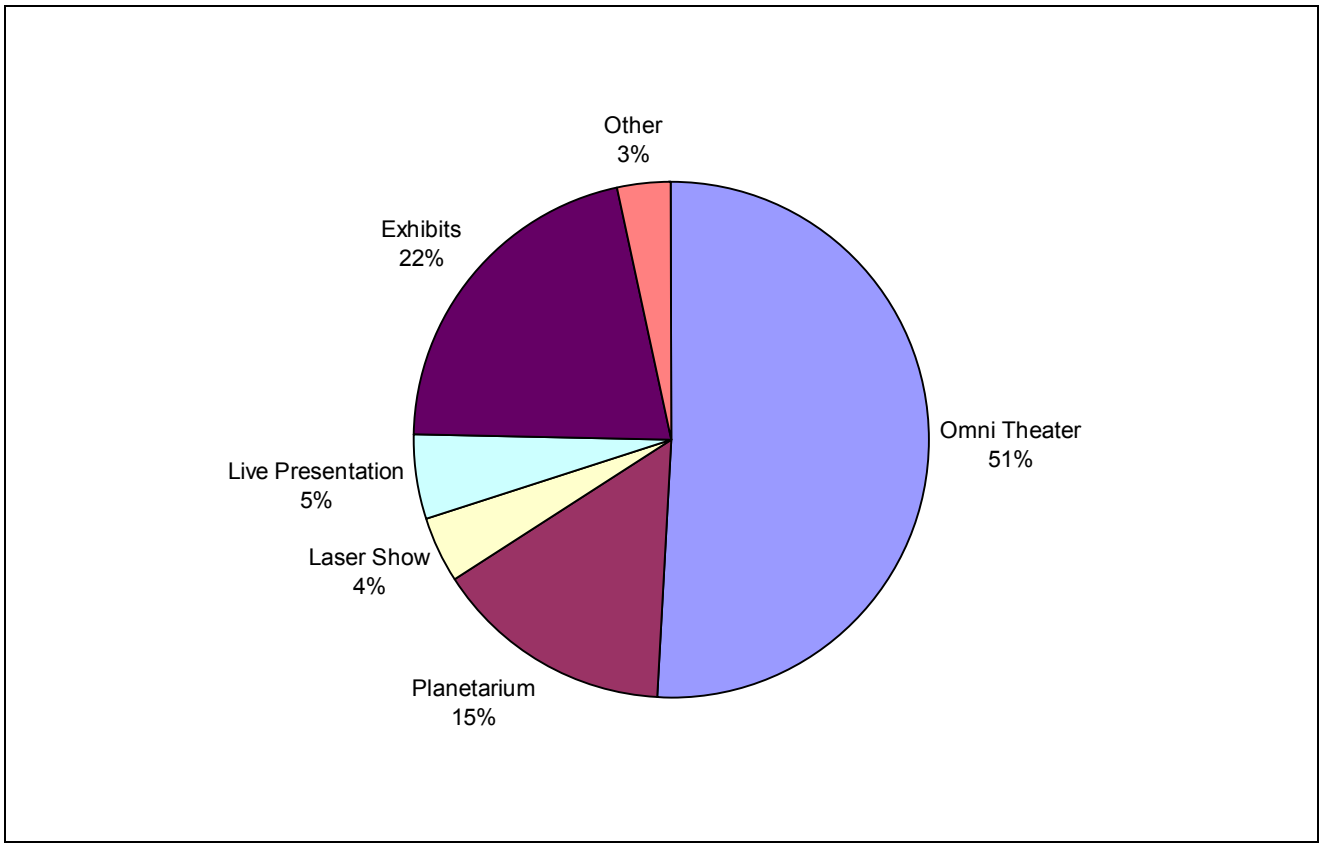

Figure 19: Program Popularity (N=780 students)

The Museum of Science's main products or areas of interest are: Omni Theatre shows, Planetarium shows, Laser Light shows, Live Presentations and Exhibits, as well as miscellaneous other events or activities. 49% of college students surveyed were interested in the Omni Theater shows. Exhibit Halls were the next most popular attraction, followed by the Planetarium, with 21% and 16% respectively.

Figure 20 highlights changes that college students would like to see instituted at the Boston Museum of Science.

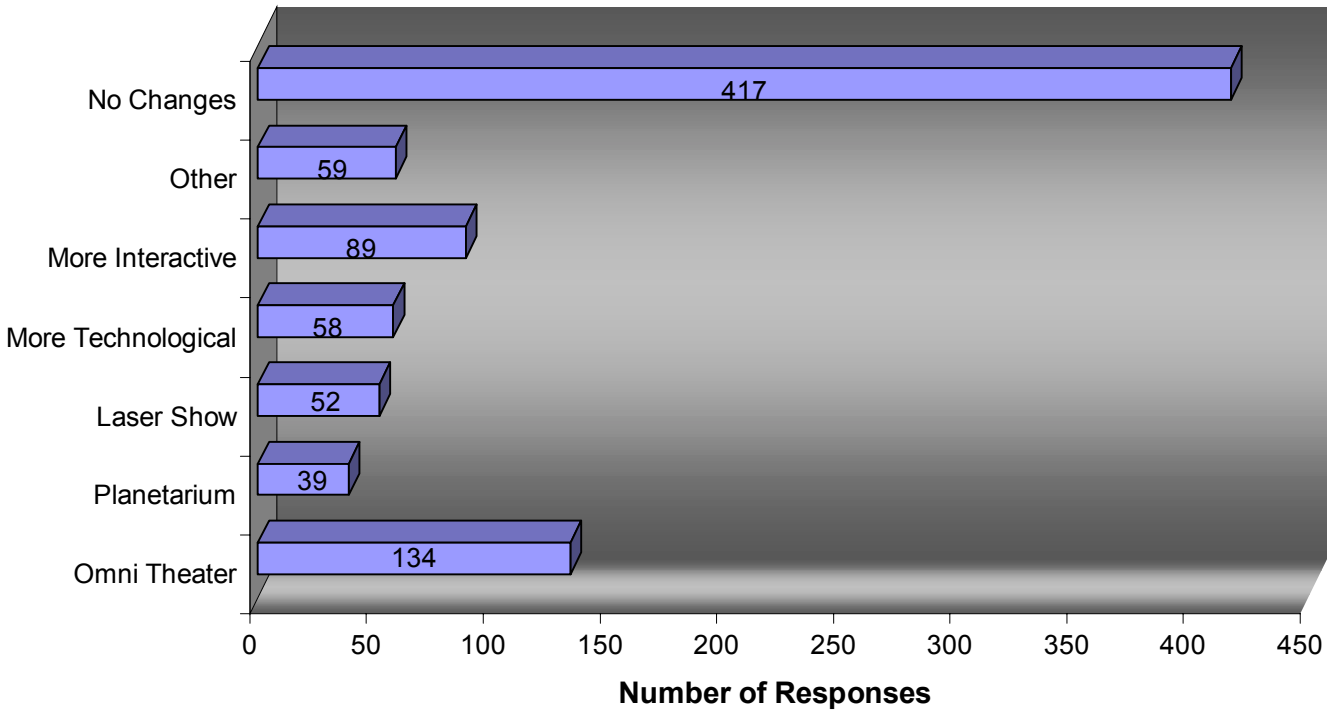

Figure 20: Suggested Changes (N=780 students)

The majority of students surveyed (369 of 780), saw no reason to change anything at the Museum of Science. 47% of the college students surveyed felt the Museum of Science didn't require any changes. 124 college students, or 16% of those surveyed felt changes could be made to the OMNI, such as more diversity of shows. The other responses were relatively equally represented, though more interactive exhibits was the next highest response, from 11% of those surveyed.

Figure 21 below shows the percentage for each change or addition that college students surveyed would like to see at the Museum of Science.

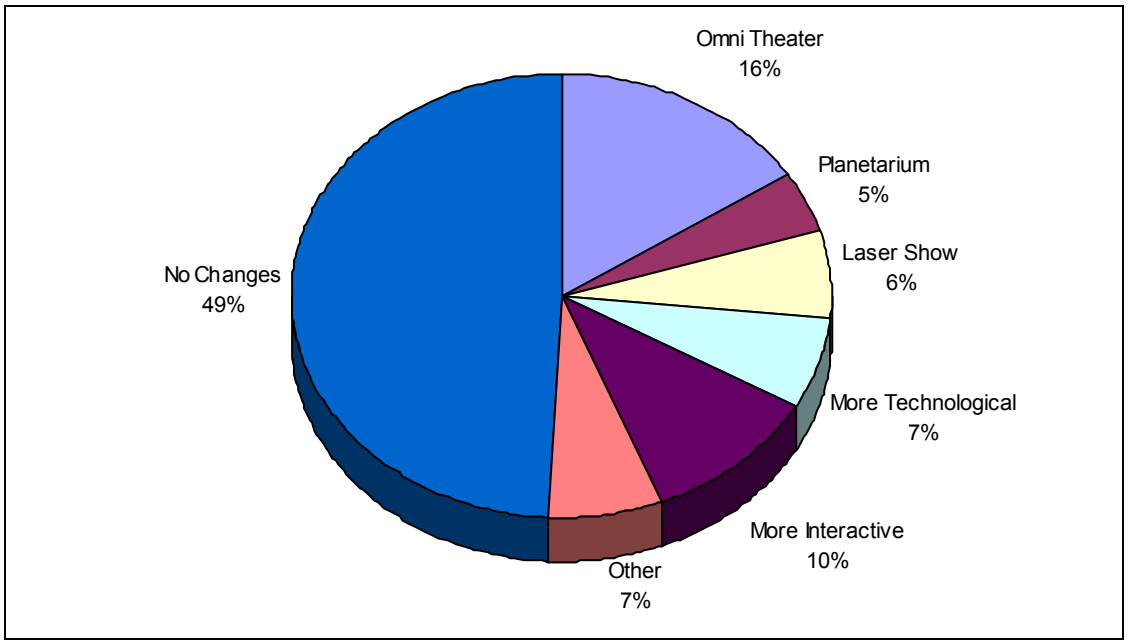

Figure 21: Suggested Change (N=780 students)

48% of surveyed college students felt no change was necessary, 16% felt that the OMNI could use some changes, and 11% felt that more interactive exhibits could be added. The other possibilities to modify existing exhibits and/or shows are roughly the same, between 5%-7%.

Figure 22 highlights various incentives that could attract college students to attend the Museum of Science more frequently.

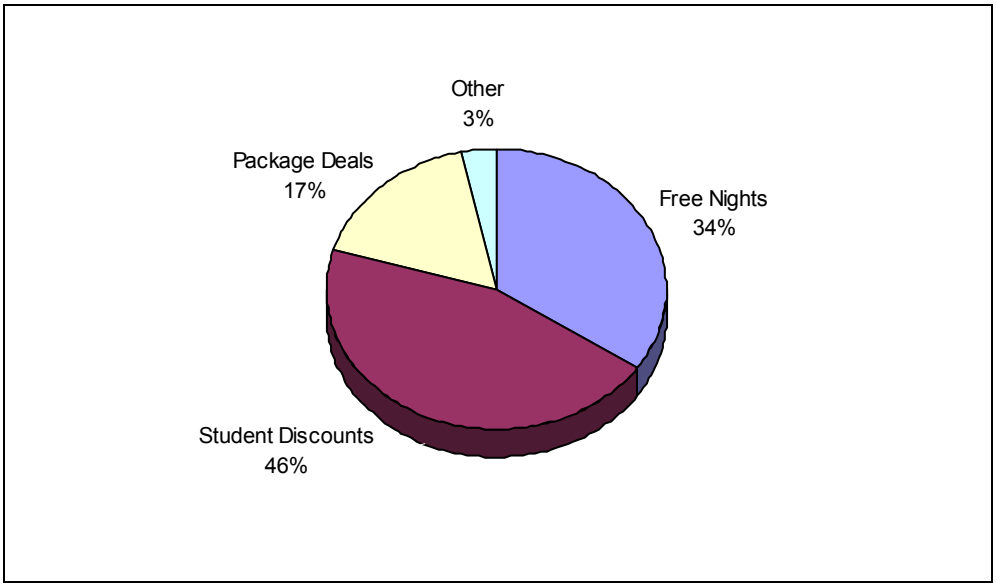

Figure 22: Student Incentives (N=780 students)

45% of the surveyed college students were interested in a student discount (with a college ID), 35% were interested in a free college night at the Museum of Science, and 17% were interested in a package deal with other museums in the Boston area.

Figure 23 depicts possible constraints that might prohibit a student from attending the Museum of Science.

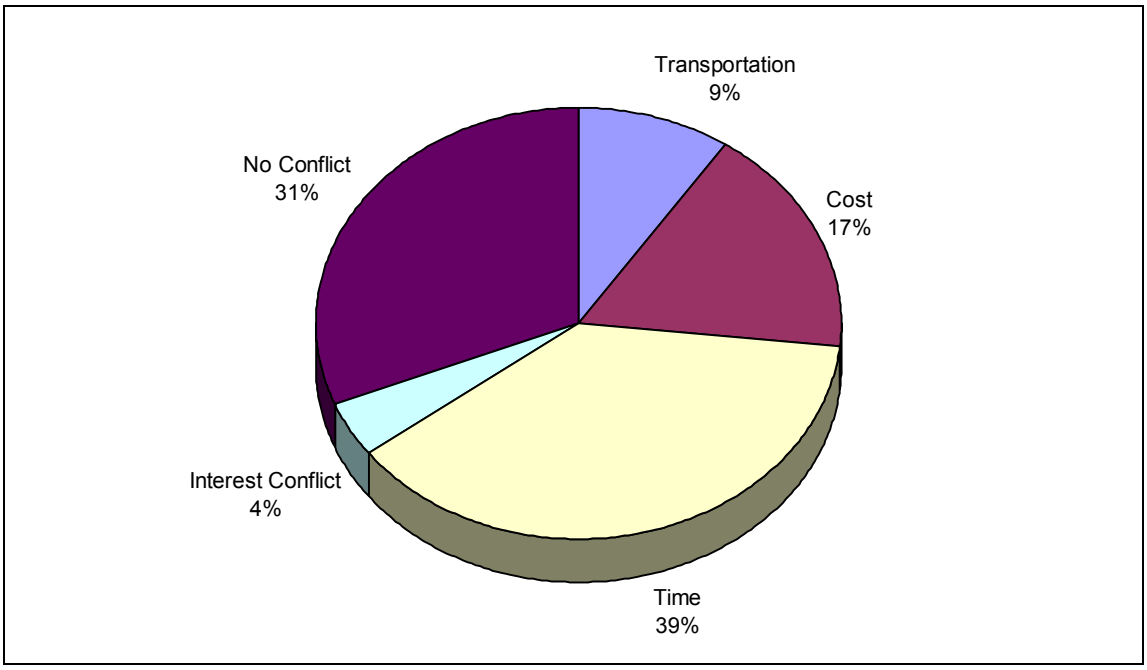

Figure 23: Factors that hinder attendance (N=780 students)

39% of the college students surveyed said they did not have enough time to go to the Museum of Science, 17% had a cost issue, and 9% said transportation was a problem. The 31% who had no constraints at all simply had not gone to the Museum of Science. Therefore, 96% of those college students surveyed showed some level of interest in attending the Museum of Science. Only 4% showed no interest at all.

The figure below, Figure 24, shows an orthographic map of the Greater Boston Area. Layered onto the map are symbols that display the locations of the colleges within the survey area. Each institution's symbol is colored accordingly to represent its primary area of study.

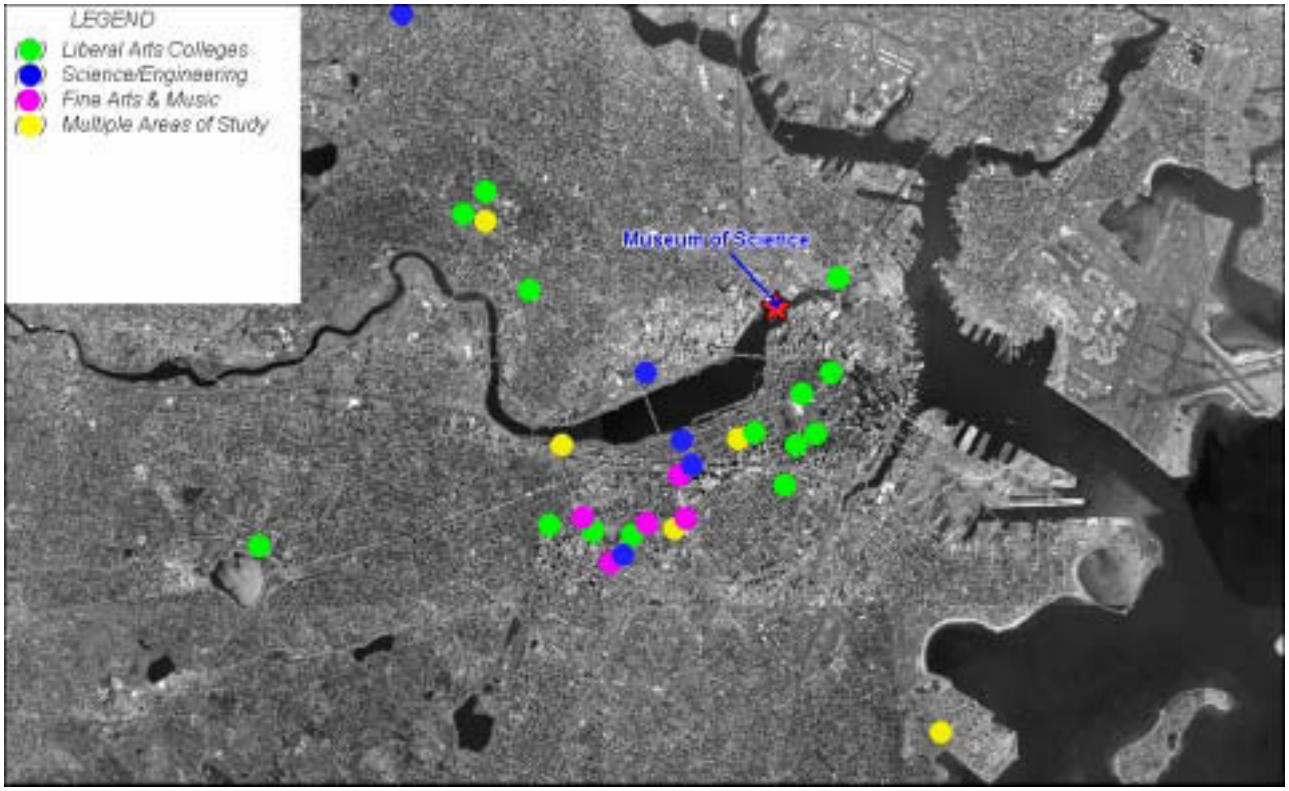

Figure 24: Colleges in Boston by Major

From Figure 24, above, we generated values for the distance of each school away from the Museum of Science (See Table 1 on page 4-35). From the data within Table 1, we constructed Table 9 by breaking down each college into their primary areas of study.

Table 9: Boston Institution Statistics by Area of Study (All 35)

Primary Area of Study	Number of Schools in Greater Boston	Average Distance (miles)
Science/Engineering 5		2.09
Fine Arts and Music	5	2.01
Liberal Arts	20	4.22
Multiple Areas of study	5	2.32

Table 10: Survey College Statistics by Area of Study (N=18)

Primary Area of Study	Number of Schools in Greater Boston	Average Distance (miles)	Percent that have been to the Museum of Science
Science/Engineering 3		2.53	69.67
Fine Arts and Music	2	2.09	71.00
Liberal Arts	8	3.19	74.11
Multiple Areas of study	5	2.32	70.60

From Table 4: Undergraduate Populations of Sample Colleges in Boston, on page 5-45, and from Table 1 we constructed the Table 10 on the preceding page. This table provides information from our sample population on primary areas of study, the average distance from the Museum of Science, and the percent of surveyed students who have attended the Museum of Science in the past. As you can see from Table 10 on page 6-71 and Figure 25 below, there is not a strong correlation between the distance an institution is from the Museum of Science and the percent of those surveyed who have attended the Museum. This proves wrong the obvious theory that "the closer the school to the Museum the more students will go." Distance is clearly not a factor in college student attendance.

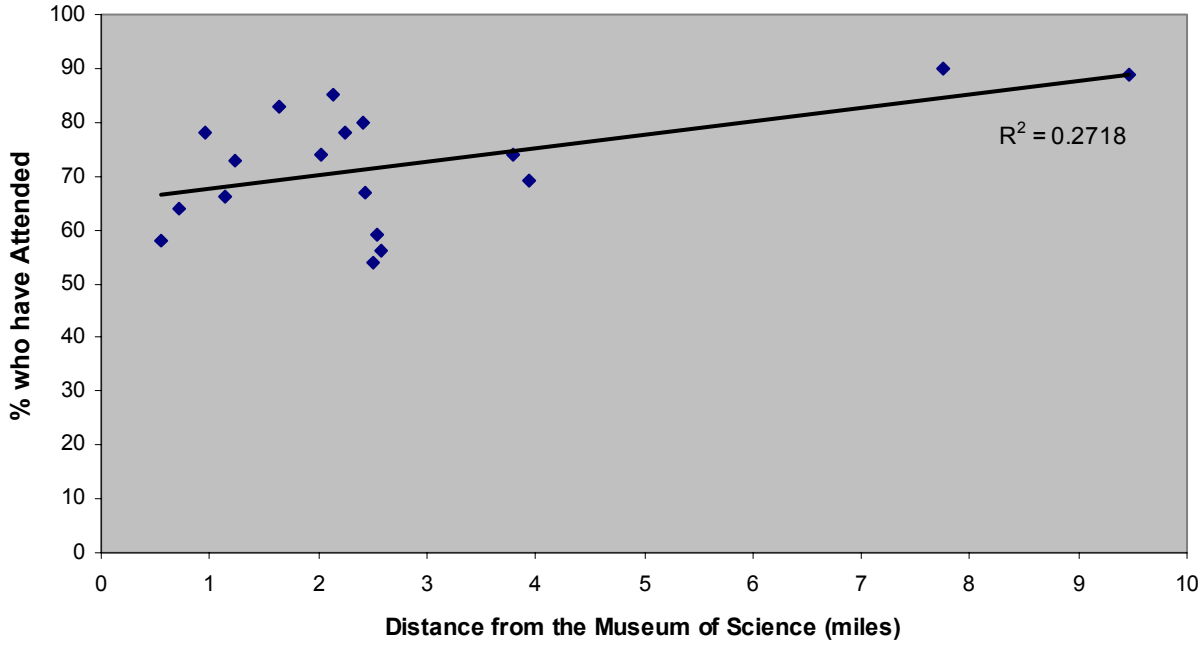

Figure 25: Percent who attend Vs. Distance from Museum

6.3 College Student Specific Marketing

This section covers marketing strategies used by museums around the country, and in the Boston area, aimed at attracting college students. Information for this section was obtained by interviews in person with Boston Museum of Science staff and by communicating with marketing directors and associates at other museums either by telephone or via email.

6.3.1 Museums Outside Boston:

6.3.1.1 Exploratorium:

Lynn Bruni, the Marketing Project Manager for the Exploratorium, provided feedback relating to marketing directly to college students. The target audience for the Exploratorium is families; specifically adults, aged 25-54 years old, with kids. Much like the Museum of Science, the Exploratorium provides a family atmosphere that allows youth learning with adult supervision. The Exploratorium's "Origins" program targets college students through web casting at the CERN Laboratories. CERN is the European Organization for Nuclear Research, the world's largest particle physics center, where research on particle stability and attractive forces occurs. This web casting has been unsuccessful in attracting college students. As a form of marketing for the webcast, physics and science students were targeted via college newspapers. However, the effectiveness of these advertisements in college newspapers was minimal.

Overall, the Exploratorium does not make an effort to target or advertise directly to college students. Marketing techniques that the museum implements, uses include advertising campaigns to support temporary exhibits, promotions with local businesses and other non-profit organizations, as well as advertising new exhibits and IMAX films using local entertainment papers and bulletin boards at coffee shops and elementary schools. Campaigns for traveling exhibits comprise the majority of the Exploratorium's marketing budget. Outside vendors and artists get paid to create works of art inside the Museum. According to Lynn Bruni this is not as appealing to college students as it is to families, or kids.

The total admission to the Exploratorium in fiscal year 2000 was 600,000 people. Of that 600,000 people, 20,000 were college students. College students represented just over 3% of the total visitor attendance last year. It is clear that the Exploratorium is not marketing directly to college students.

6.3.1.2 Franklin Institute

Joyce Kluge, a marketing associate at the Franklin Institute, similarly stated that the target audience for the museum is schools and families. College students are not targeted specifically, however, some methods are used to encourage college students to attend the museum. The Franklin Institute advertises in many collegiate coupon books and university newspapers, as well as offering a college day "on the parkway", which attracts college students

to the museum. College student attendance is not tracked, however the overall annual attendance for the Franklin Institute is.

6.3.1.3 Center of Science and Industry

Lynette Connors, a marketing associate at the Center of Science and Industry (COSI), was contacted for the purpose of understanding how the museum markets to college students in Ohio. According to Ms. Connors, the target audience is children because the Museum is regarded as an "interactive experience."

Although college students are not targeted directly, there are some techniques used to attract students to the Museum. Advertisement in university newspapers and movie cinemas has proven to make college students more aware of the museum's shows and exhibitions. COSI advertises to university professors to encourage them to take classes to the Museum to learn about science and physics. COSI also partners with public transportation to make travel easier for classes that attend the Museum. The agreement allows college students to utilize discounted fairs on shuttle buses. As another marketing tactic, COSI stays open late on Friday nights for college students to listen to local bands perform. This event is advertised using simple posters as an event for college students to attend before they go out to clubs and bars.

6.3.2 Museums in Boston:

6.3.2.1 New England Aquarium

Bill Curran, Communications Director at the N.E. Aquarium, was contacted to discuss marketing strategies that are used to attract college students. According to Mr. Curran, advertisement to college students is minimal, however the Aquarium utilizes several strategies to increase college student attendance.

Advertising in *Student Advantage*, a popular college magazine, has been used to try and increase awareness of the New England Aquarium. This magazine allows for many kinds of discounts, particularly a buy one get one free admission ticket for the New England Aquarium. This offer is particularly appealing to college students, because it encourages students to bring a friend, according to Mr. Curran. Print Media in subways, advertisements on radio stations like KISS 108 and WZLX 100.7, and various television stations are excellent methods the New England Aquarium uses to market to the general population and college students. Movie theater

advertisements are also used to market college students. Quizzes on animals, fish, etc. are given before the previews about the N.E. Aquarium.

6.3.2.2 Museum of Fine Arts

Lisa Krashna and Jen Wiseman, of the Communications Department, and Betsey Adams, of the Membership Department, at the Museum of Fine Arts (MFA) were contacted to discuss how the museum markets in general and, more specifically, to college students. The MFA's target audience solely depends on what type of exhibitions they are running at the time of evaluation. They advertise to college students mostly through the *Boston Globe*, the *Phoenix*, and local college newspapers. Simple posters are also distributed at local universities to make students aware of new exhibitions at the MFA.

Annual visitor attendance at the Museum of Fine Arts is 1.4 million. Of the nearly one and a half million visitors per year, 112,000 are college students, 75,624 are university members (Table of which universities participate is shown below), 5482 of those are School of the Museum of Fine Arts students, and the remaining 30,542 students pay admission, but receive a $2.00 discount of a $12.00 ticket. Many of the college students that attend, have art papers to write or attend because of class-related reasons, according to Betsey Adams.

Table 11: Colleges with Free Admission to the MFA

Art Institute of Boston	Harvard University	S.H.O.W.A
Babson College	Mass. College of Art	Simmons College
Berklee College of Music	Mass. College of Pharm.	Stonehill College
Boston Architectural	Massachusetts Institute of Technology	Suffolk (Arts and Sciences) College
Boston College	Montserrat College of Art	Tufts
Boston University	Mount Ida College	UMass Boston
Boston Conservatory	N.E. Conservatory	UNH
Brandeis University	N.E. School of Art and Design	Wesley College
Curry College	Newbury College	Wentworth Institute of Tech.
Emerson College	Northeastern Univerisity	Wheaton
Emmanuel College	Pine Manor College	Wheelock College
Gordon College	Roxbury College	

Note:(Table 11 illustrates colleges or universities in Massachusetts that obtained an agreement with the Museum of Fine Arts. A flat fee is paid to MFA by the college or university based on undergraduate population for their students to attend MFA without being charged. Special exhibitions are $5.00 for university members)

6.3.2.3 Museum of Science

Interviews with important museum directors were useful for understanding how the Museum of Science operates as well as knowing what strategies The Museum of Science uses or plans to use to attract college students. These interviews were our contacts for understanding the Museum's marketing strategies. (Summaries of the interviews are located in the appendix.)

The target audience of the Museum of Science is families with children (4-14), and Adults (25-44). One marketing technique used to attract college students is College Night, which is held annually in September and attracts approximately 2000 students. Advertisement for College Night is done through the following: press releases to college radio stations, Bostonsource.com, flyers, coupons, and posters. The Museum of Science usually does not buy expensive time on popular radio stations or newspapers for general advertising purposes.

A new exhibit, "Current Science and Technology," will integrate programs and exhibits to keep people in touch with current events as well as new technology. This is aimed at an older audience, which includes college students. Also, The Museum of Science's Laser Fantasy shows are a popular attraction for college students, but they are not advertised well at college campuses, according to Luke Donaher, Operations Manager of Laser Fantasy. Lastly, the Planetarium is considering instituting a performing art series, which would include Jazz and Rock musicians. This will hopefully attract an older audience, which also includes college students. Also, the Museum of Science does not offer student discounts, but MIT has an agreement similar to MFA's agreement which provides that, if students show an MIT ID card, they free admission. (A chart is shown below to illustrate marketing techniques employed by museums around the country and around the Boston area.)

Table 12: College Advertising Methods for Other Museums

	Types of Advertising			Various Incentives			Other Techniques	
Museums	**Cinema**	**Univ. Newspaper**	**Public Trans.**	**Student Discounts**	**Free College Nights/Days**	**Univ. Museum Partnerships**	**Web-casting**	**Artists at Museum**
Outside Boston								
Exploratorium		X		X			X X	
Franklin Institute		X X		X	X			
COSI	X X		X	X	X	X		X
Inside Boston								
M. of Science		X			X			
N.E. Aquarium	X		X X					
M. Fine Arts				X X		X		X

Table 12 illustrates the amount of potential there is for the Museum of Science in Boston to adopt various marketing techniques that have been successful for other museums around the country and around Boston. These museums have found the marketing strategies above to be useful for attracting college students to their museums.

Figure 26 and Figure 27, below, depict the various resources a student might use to find out about weekend events.

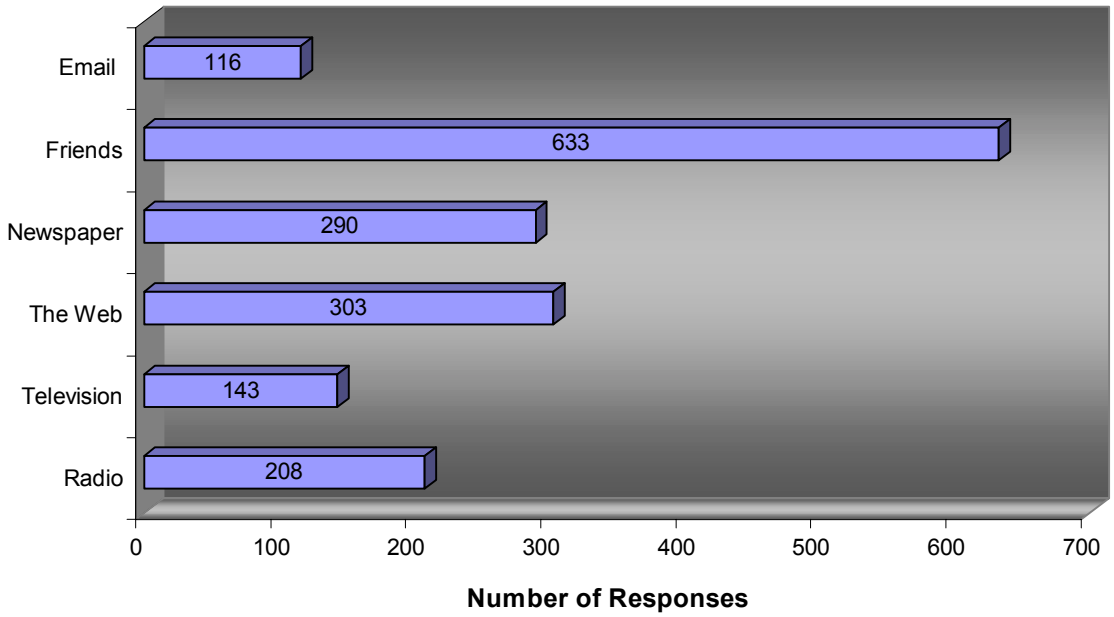

Figure 26: Media Information Sources (N=780 students)

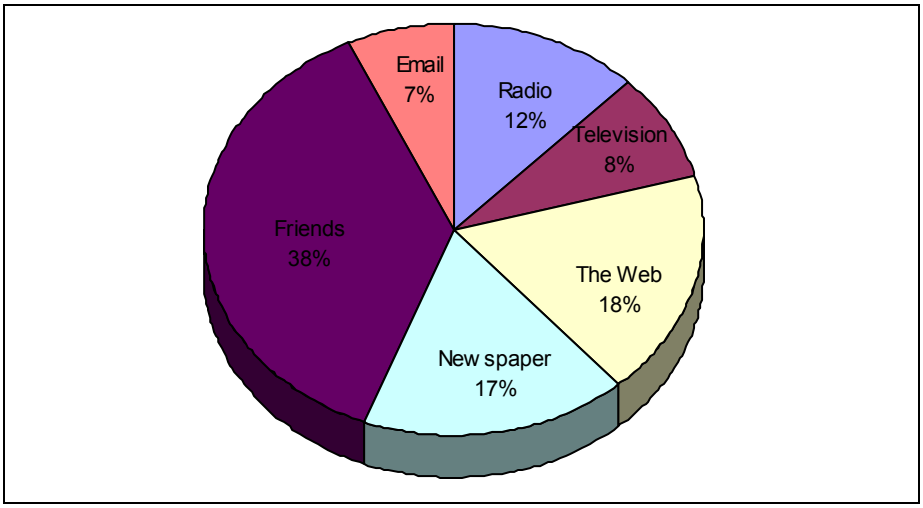

Figure 27: Media Information Sources (N=780 students)

The Media Sources that were included in this graph included: the radio, Television, the Internet, a newspaper, friends, and email reminders. One can deduce, by looking at the bar graph, that the information source that is utilized most by college students is word of mouth from friends. In fact, thirty seven percent obtain this information from their friends. The Museum of Science can use this information to determine the best way to market to college students with the use of media resources.

Figure 28 represents the means by which a student might obtain information about the Museum of Science.

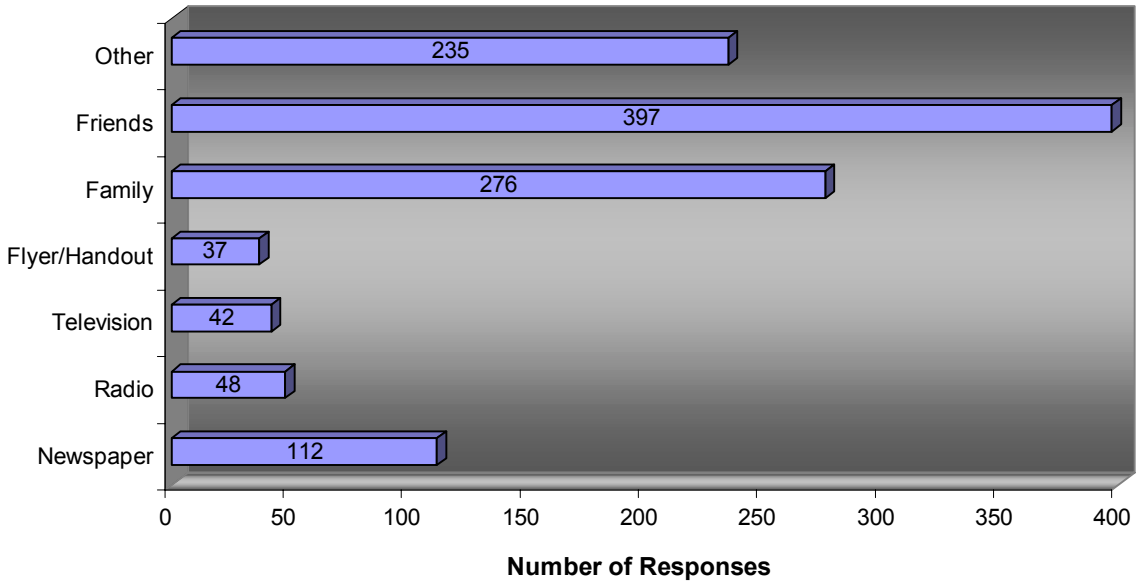

Figure 28: Student's Knowledge of the Museum of Science (N=780 students)

The methods that a student might use to obtain knowledge about the Museum of Science include: newspaper articles, radio advertisements, television commercials, some kind of flyer or handout, family, friends, and/or a method that the person who was surveyed could offer. Most of the students who were surveyed said that they hear about the Museum of Science through friends. Most common responses for the "other" option were: word of mouth (other than friends and family), school, and freshman orientation.

Figure 29 displays the means by which a student might obtain information about the Museum of Science represented by percentages.

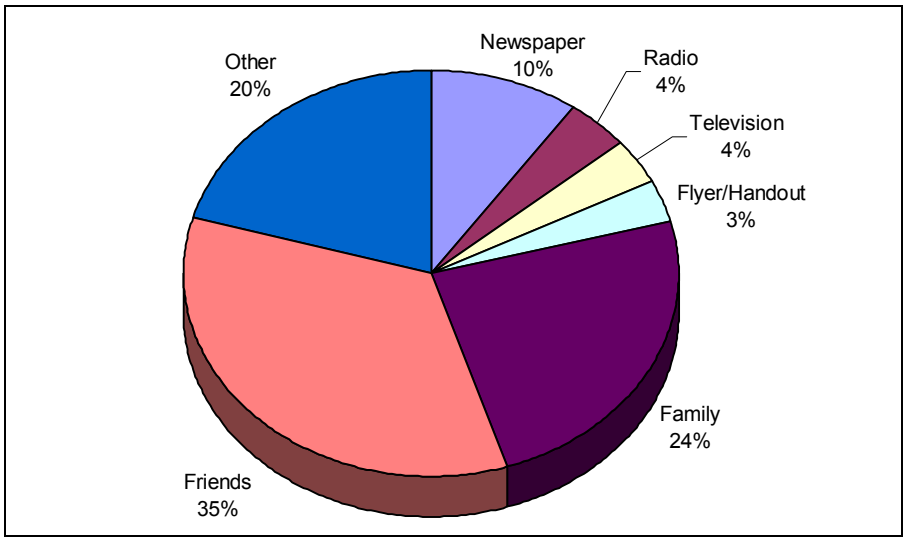

Figure 29: Students Sources of Information (N=780 students)

The methods that a student might use to obtain information about the Museum of Science include: newspaper articles, radio advertisements, television commercials, some kind of flyer or handout, family, friends, and/or another method that the person who was surveyed could offer. Most of the students who were surveyed said that they hear about the Museum of Science through friends. Most common responses for the "other" option were: word of mouth (other than friends and family), school, and freshman orientation.

7 Reco mmendations and Conclusions

7.1 Level of Interest Recommendations

From surveying, both internally and externally, the Museum of Science could consider several of the following recommendations when reviewing its marketing programs. The single biggest factor influencing college-student interest in the Museum of Science is the lack of awareness of what is going on at the museum. This lack of awareness can be easily diminished by basic advertising techniques such as putting up posters and flyers at various locations within the immediate Boston area. Science and Humanities majors, by far, were the most frequent and interested visitors in the Museum of Science. The Museum is surrounded by Science/Engineering and Liberal Arts schools, as we can see from Figure 24 on page 6-71**.** Generally speaking, marketing more heavily to liberal arts/humanities colleges in addition to engineering and science/technology schools, rather than music/arts colleges, should attract more college students to the Museum of Science. Our data demonstrates that Music and Arts students do not have the same level of interest in areas where the Museum of Science excels. Thus, marketing should not be targeted towards the music and arts majors.

84.2% of college students surveyed had attended Faneuil Hall, while 72.6% of college students surveyed had visited the Museum of Fine Arts, and 71.8% had visited the Museum of Science. These three locations are the most frequented cultural spots that college students visit in Boston. The Museum of Science could work out an agreement with the MFA to have posters of the newest OMNI shows, Laser Light shows, and traveling exhibits at the Museum of Science hanging in the lobby of the MFA. The MFA could likewise, have posters of what current exhibits are being presented, in the main lobby of the Museum of Science. The Museum could also work out a similar agreement with comedy clubs in Boston so that college-student visitors would be aware of new happenings at the Museum of Science. Various theaters in the Theater District could generate comparable agreements with the Museum of Science so that the numerous visitors to plays and musicals may see what is going on at other cultural locations around Boston. The previous set of agreements can be classified into one type of recommendation: a package deal between the Museum of Science and other Museums or

Cultural institutions (see page 7-79). This is directly linked to the interest of students in incentives for Museum attendance, which will be covered shortly.

One possible recommendation would be to initiate an advertising campaign using mass transportation, specifically the "T" (MBTA). Large numbers of people living in Boston utilize public transportation, and advertisements in the "T" stations would increase college student awareness of the Museums exhibits and also provide information on what new OMNI and Laser Shows are playing at the Museum of Science. This method of advertising can be expensive, possibly out of the budgetary range of the Museum of Science marketing department.

Of the students surveyed, 81.5% said they obtained information regarding weekend events from their friends, the highest response number for the possible choices, followed by the web, and newspapers. Friends are hard to advertise to as a primary media source. However, providing an incentive such as one admission ticket at full price, another one at half price, (or even free), is a means to attract more students. Since most college students know about events from their friends - by word of mouth - providing such an incentive is critical for the awareness aspect of the marketing scheme.

Newspapers and the Internet are the next most utilized media sources, and therefore, should be appropriately marketed. Students surveyed said that the Boston Phoenix, a free newspaper to the public, is where they obtain a significant amount of information regarding events. In addition to the Phoenix, they also read the Boston Globe for entertainment news and calendar events. The Boston Globe is too expensive for the Museum of Science to advertise in, yet the Boston Phoenix is more reasonable a range for the available budgetary constraints of the marketing department.

College students in the Boston area use such search engines such as http://www.citysearch.com and http://www.boston.com to locate event happenings in Boston. These websites are the two most popularly used when students check show times, venues, and availabilities. Using the web to advertise the Museum of Science is a great way to increase awareness of the museum; although, it can be extremely expensive to put even a small banner on a popular web page. A possible alternative would be to work out an agreement with the colleges so that there would be a banner on one of the main web pages of each college, illustrating the upcoming attractions at the Museum of Science.

Along the same lines as general media sources for awareness concerning the Museum of Science, is the primary knowledge source for students visiting the Museum of Science for the first time. 50.9% of all students surveyed said that they found out about the Museum of Science from their friends, 35.4% said their family, and 14.4% said from newspapers. Obviously friends and family are the primary sources of information. In order for the Museum of Science to have a better reputation, and be more widely recognized, significant emphasis must be placed on leaving a favorable lasting impression in the minds of the college student visitors.

Making a lasting impression on visitors to the Museum of Science is crucial because most of the college students we surveyed had attended to the museum within the past 2 years. That is what the marketing department has to focus on. Providing a reason to return – not once, but several times. There are several advertising options such as the new "Center of Science and Technology" exhibit, which tracks daily current events and emerging technologies. College students can appreciate a relationship between the science and engineering foundation they see in school, and what is going on in the real world today. As a possible incentive, college students could receive some type of incentive based on the number of their return visits to the Museum of Science, whether it is for the exhibits, the OMNI, the Planetarium, or the Laser Fantasy shows. Incentives such as a free pass to another OMNI show, or discounted admission, would surely attract college students for return visits. Another possible recommendation for attracting college students to the Museum of Science would be to show previews immediately before an OMNI show, to entice people to come back and see future shows. This technique works extremely well in movie theaters, as it convinces people to return, based on a short clip of what is to come.

In surveying students for purely interest-related numbers, we discovered that the majority of students (66.8%), were interested in the OMNI, then 28.3% in the exhibits, and the 19.7% in the planetarium. The OMNI Theater is the most successful portion of the Museum in terms of repeat college business. Most of the exhibits in the Museum of Science are permanent, and unchanging, so they do not attract as many return visits from college students. The ability to interact with an exhibit is critical, and as not all exhibits are interactive, they are not drawing college students to the Museum of Science in as large of numbers as possible. The OMNI is what students want to see. College students want to see a greater number of OMNI shows, with more diverse content.

College students are also very impatient and do not like to wait in lines for an hour just to buy tickets, and than discover as they get closer to the front of the line, that the show they wanted to see has sold out. Presently there is no reliable online ticket-purchase method, but there is a sub-page to check and see what shows are still available, and what shows have sold out. Linking an "Instant Checkout" system online would utilize a credit card to quickly secure tickets, without having to go to the Museum to get tickets, and also wait in line. This would significantly reduce the lines at the entrance to the Museum of Science lobby, and facilitate more accurate and efficient attendance data collection. Also, if this online ticket-purchasing system was implemented, there could be a demographic table on the payment page that contains required fields, such as: age, gender, college student (Y/N), what college, and transportation method. These could be check boxes, with several options each, that the user would be able to check once, or multiple times if necessary. A substantial data set could be compiled from this method, and used to determine other marketing strategies for future implementation. In an era where market information is a highly prized commodity, the Museum of Science has an opportunity to gather detailed market information while simultaneously improving attendance. Organizations such as Arts Boston, The Wang Center, Broadway in Boston/SFX Theatrical Group might be persuaded to exchange mailing lists or other data about theatre and museum audiences to the mutual benefit of the Museum of Science and such cultural groups.

From the conducted surveys our group feels that incentives are the best means to achieve an increase in museum attendance due to college students. It is important to note that incentives to college students are also directly linked to factors that hinder students from attending the Museum of Science. 83.6% of students surveyed wished to see some type of Student Discount, whether it was half price admission, or a $2 discount, etc. 63.7% of college students surveyed said they would like to see a free college night during the year. Most were unaware that there is a college night in September that is free for all college students. If there was a college night once every 3-4 months a year, on a Monday (when the Museum of Science is closed, and would be producing no revenue otherwise), then the students would be much more aware, and would communicate to their friends about the Museum of Science.

According to our survey 31.9% of the students felt that a package deal with local museums would be a valid incentive to make them attend the Museum of Science. Although this incentive is not as popular as free nights or college student discount it is nevertheless still an

achievable option. A package Deal with other museums such as the MFA, the Aquarium, and the Isabella Stewart Gardner Museum is a great way to work interdependently with other museums while increasing the attendance at the Museum of Science.

Realizing that 45.5% of all college students surveyed said they did not attend the Museum of Science out of a lack of time, providing a student discount should be effective at drawing increased attendance. A student discount would be valid during any normal exhibit hall operating hours, and would not limit the student to one or two nights a year that they could visit. This discount would be valid every day of the week, including weekends. Students would then be able to go to the Museum of Science when it is convenient for them, and not feel "inconvenienced" by a schedule that does not permit their attendance (free night). Only 11% of those surveyed said that transportation was a problem, which would leads us to believe that transportation is not as much of an issue as lack of time.

When considering advertisement to colleges in the Boston area, it is important to understand that there is no strong statistical correlation between the classification of a college and its distance from the Museum of Science. The tendency of college students, according to the 780 external surveys completed at 18 different schools, reveals distance, within a 3-mile radius of the Museum, does not affect attendance. A student's major and school classification (i.e. liberal arts, science, or arts) is not a significant reason that a student would not visit the Museum of Science. A recommendation would be to advertise equally to all schools within a 3-mile radius of the Museum, because most students surveyed enjoy OMNI shows, Laser Fantasy, and were also entertained by the idea of presentations of current information on the new Current Science and Technology stage.

7.2 Marketing Related Recommendations

Analyzing the results of marketing strategies used by other museums around the country and in Boston has revealed some interesting techniques that may be beneficial to the Museum of Science. These marketing techniques have had some degree of success in attracting college students to museums at other locations.

The Exploratorium in San Francisco, California used a web broadcast at the CERN Laboratories, in Geneva, Switzerland to attract physics and science college students to their museum. This particular technique did not work very well. We would like to recommend against web broadcast because it appears to be uninteresting to college students. Marketing

techniques that have worked well for the Exploratorium have been the hanging of simple posters at local universities to advertise IMAX films and also the recruiting of contemporary artists to create works of art in the museum. Artists create everything from canvas paintings to metal sculptures inside the Museum. Interactive exhibits and approaches attract college students can be seen in the 20,000 college students the museum sees annually. The Exploratorium's overall attendance was 600,000 for the year of 2000. The college student attendee percentage of 3.3% is very impressive considering there are approximately 10-15 colleges in the San Francisco area, which is considerably less than the 35 colleges and universities in the Boston area.

The more interactive exhibits are, the better the exhibits from a standpoint of attracting college students. Watching an artist create a work of art in a museum has proven interesting to college students, and could possibly work at the Museum of Science. We also recommend simple poster efforts at local universities, making college students aware of interesting new IMAX films and presentations that may be appealing to college students.

The Center of Science and Industry (COSI) in Toledo, Ohio and the Franklin Institute in Philadelphia, Pennsylvania are similar science museums that do not target college students directly, but have used some marketing techniques to attract college students for increased attendance.

COSI has a college day, similar to that of the Museum of Science's college night. On these college days/nights, college students come to the museum, show their college ID's and receive free admission. This technique works fairly well to bring awareness to college students about what COSI has to offer. Advertisements and discounts are also offered in collegiate coupon books. We recommend more college nights at the Museum of Science because they are a great way to increase awareness among the college market.

The Franklin Institute has experienced success advertising to universities by encouraging professors to take their students to the museum to hear a lecture on related material, or to see related experiments. This technique might prove successful at the Museum of Science. By contacting academic department heads at various colleges within Boston and letting them know that the Museum of Science has certain lectures that may be of interest to there students, the Museum could see a notable increase in attendance.

The Museum of Fine Arts in Boston uses a marketing technique that contributes greatly to their impressive annual college student attendance. The MFA sees 112,648 college students

out of a total attendance of 1.4 million visitors per year. 75,624 of these are granted free admission through a university agreement. 30,542 pay at a discount of $2.00 off a regular $12.00 admission and 5,482 attend the School of the Museum of Fine Arts.

Thirty-five universities and colleges in the Boston area have university agreements with the MFA. These schools pay the Museum of Fine Arts a flat fee, (based on enrollment), so that their students can attend the Museum of Fine Arts for free, providing that they show a valid college ID card. University agreements bring in $170,000 annually, which averages out to $2.24 a student. This is revenue that might otherwise not be directed to the MFA.

University agreements would be a great way for the Museum of Science to attract more college students and revenue. If the Museum of Science could convince local colleges and universities that students will benefit academically and culturally, universities may be inclined to pay the fee to the Museum of Science for their students to attend the museum at no admission cost. This would bring in increased revenue and hopefully increase college student attendance.

The Boston Museum of Science could benefit greatly from adopting marketing techniques used by other museums; however, the museum's attractions that appeal to college students will be addressed first. The Museum of Science's OMNI theater presentations and Laser Fantasy shows are very popular to the college audience. Moreover, the live presentations on the Current Science and Technology stage are aimed particularly at a young adult audience and will most likely appeal to college students.

Live presentations on the Current Science and Technology stage are a great way to attract college students especially if the presentations offer a particularly interesting presentation about current affairs that a typical college student would study in a class. Advertising is extremely crucial in attracting more college age students to the Museum of Science. If students are aware of OMNI films and various presentations the Museum has to offer, they will develop a greater tendency to attend the Museum. Hanging posters and distributing flyers on a campus is one way to increase college students' awareness of events at the Museum of Science.

Another recommendation would be to have student-ambassadors at local colleges and universities. These ambassadors could be offered incentives from the Museum of Science to raise awareness about the museum to the undergraduate student body, thereby facilitating more college student attendance at the Museum of Science. These ambassadors could be interns, resident advisors or hall directors, presidents of clubs and organizations on campus, or any

student with enough free time who is willing to advertise for the Museum of Science. Student ambassadors, who are undergraduates at universities in Boston, could contribute much to solving the simple problem of students being unaware of what goes on at the museum. These ambassadors could do everything from putting up posters for upcoming OMNI (IMAX) attractions, to entering an article in the campus newspaper. Our group feels that adding student ambassadors on college campuses to aid in advertising events for the Museum may be the single least expensive, yet worthwhile way to increase college student awareness of the Museum of Science.

Resident Advisors on college campuses are an important resource to college students. By targeting the Residential Services departments on college campuses, we can utilize an RA's resources to advertise directly to the college students. When properly informed, Resident Advisors (RA's), can be made aware of new OMNI or Laser Light presentations, as well as, Free College Nights and discount programs. By increasing the awareness of RA's at colleges in Boston, these RA's will be able to encourage residents to attend the Museum of Science as well as, organize formal group trips. The relationship with the Residential Services staff on college campuses can be compared to the recommendation of using student ambassadors. Residential Advisors can serve as a valuable liaison between Museum of Science staff and the students of area colleges. To get RA's involved in the activities of the Museum, it is recommended that special screening nights be held for RA's only. These nights will be free of charge (or at least discounted) and provide information about new exhibits and offerings. According to our survey data, most students find out information from word of mouth. Since Resident Advisors interact with a multitude of students each day, they have ample opportunities to spread the word about the Museum of Science.

The Museum of Science just recently opened the Center for Science and Technology, a new exhibit focused solely on current technologies. This exhibit is a new venture at the Museum of Science with corporate sponsorship at its foundation. EMC Corp., the title sponsor for the Center, and other high-tech companies such as Nortel Networks, Teradyne Inc., etc. have made considerable contributions to create a new interactive exhibit that is geared towards the college student audience. By utilizing corporate sponsorship, the Museum of Science can organize events such as a college Career Fair at the Museum of Science technology sessions, and technology/design competitions. By establishing partnerships with prospering corporations, the

Museum of Science can hold events (at minimal expense) that attract college students in large numbers. Maintaining the relationships with these corporations is crucial to continued success for both the Museum of Science and associated companies.

7.3 Conclusions

The Museum of Science can attract college students with the adoption of minor marketing techniques specifically targeted towards college students. The Museum of Science certainly appeals to college students, however a lack of awareness of new attractions and a general lack of advertisement keeps college students "in the dark" about Museum offerings.

The Museum of Science has a great deal to offer the college student population in Boston. It offers an entertaining and educational experience that has considerable potential to attract large numbers of college students if sufficient awareness is raised through the advertisement of its products.

College student discounts, university agreements, on-line ticket purchasing, adding variety to OMNI films, and advertisement at universities will attract first-time college student visitors to the Museum of Science as well as, prompt return visits from college students who have already been to the museum in the past. Out of all the museum's attractions, OMNI shows are the most appealing to college students. OMNI theater previews and return incentives will help to promote multiple visits from the college student population in Boston.

The mission of the Museum of Science is to stimulate interest in, and further understanding of, science and technology and their importance for individuals and for society. The Museum's mission is inclusive to all age groups, including college students. However, in recent years, the Museum of Science has experienced a decrease in college student attendance. Therefore, their mission is not completely fulfilled because they are unable to stimulate significant interest from the college student population. By implementing simple marketing enhancements directed toward college students, the Museum of Science will surely increase the awareness of the Museum and simultaneously increase the representative student attendance.

The most essential result that came out of this study concludes that college students have a considerable interest in the Museum of Science. However, lack of awareness is the single largest obstacle that impedes the attendance of college students in large numbers. We conclude that a simple, cost-effective marketing strategy specifically designed to stimulate the interest of

the college student demographic will prove to provide an added source of revenue and a better public perception of the Museum of Science in the future.

8 Biblio graphy

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9 A ppendix

9.1 Annotated Bibliography

1.) Elaine Santoro (*Fund Raising Management* September 1996) compiled and explored statistics on the Museum of Discovery and Science in Fort Lauderdale, Florida. The Museum was lacking funds to sufficiently operate and an organization of women helped to find funding so the museum could continue serving the public. This study looks at alternative ways of funding the museum and how they affect the amount of business the museum attracts. Federal funding was cut down so private funding was searched for and found. This article cites other factors that were contributory to the museums success. In this article you will find useful conclusions on how the Discovery and Science Museum increased their attendance with the support of enthusiastic private funding.

2.) Mukesh Bhargava and Naveen Donthu (*Journal of Advertising Research* July 1999) conducted two studies of the sales response to outdoor advertising finding significant temporal, spatial, and promotional effects. The article reports the results of the two field experiments and collected and analyzed three different types of data. Studies briefly included in this journal article are the impact of multimedia campaigns, specifically those involving outdoor advertising. The conclusion of this article includes a table showing the percentage of change in the daily number of paying visitors.

3.) The Science Museum in London (*Financial Times, London Edition* March 06, 1996) announces the creation of a virtual museum. This Museum is using the Internet to try and reshape the education and research of the London area. The Science Museum goes online with the potential to attract millions of visitors who can access the museum's 500 web pages on its new web server. The conclusions of the study are not available until we are able to receive the article from the inter-library loan program.

4.) An article in a regional newspaper (*Virginian-Pilot ~(Norfolk)* May 25, 1996) details how Virginia Beach boosts their advertising to lure in summer tourists. The main topic here is that their increase in advertising is attempting to increase summer tourist attendance. The new ad campaign- The New Virginia Beach, " You've never seen anything like it, even if you been here before," consisted of touted attractions- improved oceanfront, new 20,000

seat amphitheater, etc. Attempting to entice tourists to some to Virginia Beach instead of Myrtle Beach, SC; Atlanta, GA; or Disney. The conclusion of the article details the success of the campaign and why more people attended Virginia Beach during the summer than in years past. Ultimately those tourists who didn't mind the extra travel were the ones who went to Virginia Beach.

5.) In a recent newsletter (*Youth Markets Alert*) Subaru announced that it was teaming up with traveling science museums to visit elementary schools. Subaru announced that they would sponsor 4 traveling science museums and visit elementary schools to get children interested in science. Subaru gains a great public image as well as advertising when they bring their new Subaru vehicles into the schools. Science equipment will be used to conduct experiments and demos. Subaru gains advertising and image. The incentives of this study show that Subaru's image improved and that the interest in Subaru and in Science increased in the schools where the demonstrations were conducted.

6.) In a recent journal article (*Precision Marketing*) the details of a London Science Museums attempt to redefine their image are depicted. The Science Museum intended to formulate a new image with the public. This article describes the method of integrating and implementing a first marketing effort that began with national press ads, London Underground posters, 3rd-party promotions, direct mail and internet marketing (in the UK). The articles highlights how the attendance levels increased with the new marketing scheme and how the popularity of the museum increases as well.

7.) A regional newspaper (*Plain Dealer ~(Cleveland, OH)* June 30, 1996) article illustrates the process of redefining the image and infrastructure by changing the outward focus with focus groups convening to find out what area residents want; taking natural history resources out to the public. Major outreach programs with lunchtime nature tours and demos are conducted within the city. The article cites how the one-year attendance doubles but attendance is not predictable because of the exhibit schedule. Certain exhibits attract significantly more people. Exhibits need to be tailored to the area residents in order to boost the attendance on a yearly basis.

8.) In a journal article "Museum's Dark Days," (*Crain's Chicago Business 18* April 10, 1995) the total attendance at Chicago's Museums is analyzed. The studies show that from 1991-1994 the attendance had fallen. To analyze why, they conducted a survey, the attendance

days were calculated and data was collected. During the study 60,000 ft^2 of exhibit space was introduced to the Museum of Science and Industry. 6 Museums received $36 million per year in operating subsidies. The conclusions of the study were that the marketing of the all the museums needed to be re-evaluated as the funding was becoming more and more scarce. Suggestions for the marketing are included in this article.

9.) A respected marketing journal (*Marketing News 29* January 16, 1995) reports on the impact of marketing on Biosphere Tourism. Biosphere 2 plans to link its promotional efforts with those of other area ecology or science oriented attractions to increase tourism. The executives of the company met with the representatives from Tucson Botanical Gardens, Pima Air and Space Museum, and the Sonara Desert Museum to discuss the $226 million dollar experiment. The executive's goal was to find out how much of the museums features can be linked as a tourist package. The conclusion of this study was that the creation of a tourist package would increase the tourism that the Biosphere 2 saw. Tourists would also now be able to attend museums that they would not normally attend because of discounted prices.

10.) Sony Development (*Shopping Center World 28* August 1999) launched Metreon entertainment complex on 6/16/99 in San Francisco, CA. Sony Development's $85 million, 350,000 ft^2, five story Metreon complex was developed by the Millennium Corporation in San Francisco. Sony's Metreon complex is the main attraction of the Yerba Buena Gardens, a three block of recreational and cultural uses emphasizing the city's Moscone Convention Center. Sony's complex will attract many different people and will increase the revenue of San Francisco's Yerba Buena Gardens.

11.) A journal article (*AdWeek New England AdWeek XXXVI* January 4, 1999) detailed the Boston Museum of Science's new 30-second television ad. Gearon Hoffman developed the television advertisement to promote an Amazon Film that was to be presented in the Boston Museum of Science. The presentation attracted many interested patrons to the museum. During its tenure the presentation was the most visited exhibit in the museum.

12.) Tom Linafelt's newspaper article (*Kansas City Business Journal 16, no. 23*) explains the Science City marketing plan and why it anticipates 1 million guests. When the new plan is implemented the museum anticipates that the admission will reach 1 million guests. Implementation of the plan developed in conjunction with museum officials and marketing

agencies in Kansas City. The conclusion of the marketing plan was that it seemed logical but, in order to increase the number of guests, the museum must also broaden the appeal of exhibits.

13.) June Arney explores why the Science Center in Baltimore is now reporting its best attendance ever. New exhibits in the museum are sparking public appeal. The marketing schemes are credited for attracting more that 645,000 people, a record increase, by highlighting new exhibits. The new scheme worked and attracted the public at an unprecedented rate.

14.) David H. Kenny explains the past fifty years of the Children's Museum in Indianapolis, I.N. in his 1975 book. (*Fifty Years Young: The Children's Museum December 4, 1975*). Kenny explains the hardships that the museum has faced and he predicts lies in the future. Kenny's conclusion is specific to the Indianapolis museum but has implications to other museums across the country. The hardships faced by museums over the years are quite similar in nature and this book could provide useful correlations to the Boston Museum of Science.

15.) Howard Levy and Lynn Ross-Molloy look at the ways of beginning a community museum (*Beginning a Community Museum 1975*). The authors illustrate many examples of everything from how buildings are selected to bringing community involvement into the picture. This book tends to focus primarily on building design and what types of interior finish to use for maximum success. The conclusion is based on the fact that museums are very important to the neighborhoods that house them. These neighborhoods are directly affected by these museums; therefore they must be maintained adequately.

16.) Alma Stephanie Wittlin attempts to predict the future in her 1970 book on her expectations on museums (*Museums: In Search of a Usable Future 1970*). She investigates the possibilities of museums loosing touch with society, as well as, the implications on future generations. This book is useful for understanding what the main focus of the museums was in the years past and finding out what problems these museums faced. It is interesting to relate the problems of yesteryear to the problems of today. This book provides useful conclusions to the problems faced in the past; some of which may be applicable to today's problems.

17.) Ivan Karp, Christine Mullen Kreamer, and Steven D. Lavine produced a book that is enormously useful in gaining an awareness of how museums effect the community in which

they are located (*Museums and Communities: The Politics of Public Culture 1992*). Karp and associates help illustrate the significance of designing relations between the museums and communities. In doing so, the group discovers the Audience, Ownership, and Authority involved in the museum communities. The conclusion provides a way of defining the community through the exhibits of the museum.

18.) Stephen Weil writes of the prospects of museums and how they affect the cultural society (*A Cabinet of Curiosities: Inquiries into Museums and Their Prospects 1995*). The book begins by speaking about museums in general, and then moves into different types of museums, and finally the public policy associated with most museums. This book provides training exercises for museum staff to help them understand their collections and collector information. The conclusions state that there are many curiosities that still exist in the operation of museums and what is happening with those problems in the future.

19.) Ivan Karp and Steven Lavine team up again in a recent book that analyzes the politics involved in museum exhibitions and displays (*Exhibiting Cultures: The Poetics and Politics of Museum Display 1991*). As you may expect from Ivan Karp, this book focuses on the culture and representation of museums and breaks-down museums as a way of seeing. The book analyzes past and current practices of museum exhibition maintenance and the politics that attempt to govern the institutions. The conclusion of this book sums up the cultures with a review of ethnography.

20.) William T. Alderson worked with the Baltimore City Life Museums in Baltimore, MD to compose a series of passages describing the process of the emergence of the American Museum (*Mermaids, Mummies, and Mastodons: The Emergence of the American Museum 1992*). Despite the title of this book there is no real implication to the American Museum as a whole. This book focuses all of its energy on the museums of Baltimore, MD and how they grew to affect Baltimore's culture. The compilation includes early data from the times of the Peale Family of 1814 and ties into the present social class of the Baltimore area.

21.) California Science Center Website, 2000-All Rights Reserved, www.casciencectr.org. Information about California Science Center's history, exhibits, mission statement, and general facts about the museum are found in this website. Information pertaining to the Museum's operations and specific exhibits was compiled to better inform people who are

interested in the Museum. It was concluded that the California Science Center is a popular tourist attraction and a great place to attend to view science and technological marvels.

22.) The Exploratorium Website, 2000-All Rights Reserved, www.exploratorium.edu. Information about how the Exploratorium was developed from the Palace of Fine Arts, its exhibits, general information, and information about the Museum's IMAX theater are all found in this website. Information pertaining to the Museum's operations and specific exhibits was compiled to better inform people who are interested in the Museum, also detailed information about how the Palace of Fine Arts was used to create the Exploratorium. It was concluded that the Exploratorium is a very popular museum to attend and provides ample information about science and technology in a unique method where people are encouraged to participate in the exhibits.

23.) The Miami Museum of Science Website, 2000-All Rights Reserved, www.miamisci.org. Information about Miami Museum of Science's history, exhibits, and mission statement, and general facts about the museum are found in this website. Information about the Museum was compiled and neatly organized in an informative website. It can be concluded that the Miami Museum of Science is popular in Florida and educates the public about science and technology.

24.) The Franklin Institute Science Museum Website, 2000-All Rights Reserved, http://sln.fi.edu. Information about the Museum's exhibits, history, mission statement, and overall operations can be found in this website. Information was compiled to provide viewers with excellent knowledge of the museum. It can be concluded that the Franklin Institute Science Museum is an important landmark in the Philadelphia area that educates those who attend about science and technology.

25.) The Chicago Museum of Science and Industry Website, 2001-All Rights Reserved, www.msichicago.org. General information about the Museum's history, unique exhibits, and overall tourist appeal are available in this website. Information was compiled about the Museum to provide those who view the website good information about the Museum. It is concluded that the Chicago Museum of Science and Industry has increased awareness of technology and industry through its fascinating exhibits.

26.) The Smithsonian Institution: The National Museum of Natural History Website, January 2001-All Rights Reserved, www.mnh.si.edu/SpecialEvents/AboutNMNH.htm. Information

about the Smithsonian Institution is provided in this website specifically its history, mission, exhibits, and general information about how the Museum was started. Information was compiled to provide ample background of the Museum. It can be concluded that the Smithsonian Institution is a very popular tourist attraction in Washington D.C.

27.) Rudolph Chelminski's article from (*Smithsonian* v. 27 August 1996) explores the increasing range and complexity of the Berklee College of Music in Boston, and how in its 50-year existence, it has been attended by some of the best musicians the world over. It is the oldest, largest, and most unique institution of its kind anywhere in the world, offering a dozen major in which one could find their place among the gifted musicians of the world. Realizing how influential Berklee College is to an undergraduate's interest in educational science and art, we can use some of the models of how Berklee markets itself to prospective students, towards prospective museum attendees. Berklee has continued to attract superior students from over 75 countries up through the present year.

28.) Woodie Flowers, a Professor of Mechanical Engineering at MIT shares his thoughts in an interview (*ASEE Prism* v. 6 January 1997) wherein he discusses education from an engineering background, and how he wants everyone to understand and love the subject of engineering. Explaining similar reasoning to high school students can push them in a more science-oriented direction, and as they come to college, will be more apt to find interest in something like a science museum.

29.) The (Facts about New England colleges, universities, and institutes) has lots of information on colleges specific to New England, especially Massachusetts, and more specifically Boston. This gives undergrad population numbers, locations, etc.

30.) The (Connection: New England's Journal of Higher Education) also has a multitude of information regarding universities in New England such as locations, majors, undergrad population numbers, etc.

31.) (Peterson's Guide to Four-Year Colleges) has nearly everything you could possibly want to locate college information. This volume has information for several thousand schools the country over, and has many of the schools in Massachusetts.

32.) Martha Buskirk's article (Art Around the Hub) discusses the inconsistency in contemporary art and the lack of regional identity Boston has been experiencing in the recent few years, due to factors both controllable and not. While discussing exhibits of contemporary art in

Boston museums, and colleges, it is possible to link conclusions drawn from Martha's observations.

33.) Greg O'Brien's article (A Walk Along Freedom Trail) discusses the educational center and cultural North Pole that is behind only New York. Greg delves into why the city is such a success, especially as a tourist attraction, citing the local economy; this could be a perfect material background for how we can market the Museum of Science to college students, as they begin to learn about the city of Boston.

34.) Andrew Fixner, in his newspaper article (Thanks to the Web, Campus Radio is Casting A Much Wider Net), explains how using campus radio at BU got a lot more ratings through webcasting, instead of strictly on campus radio. Utilizing campus radio stations for marketing would be very effective in reaching out to attract college students to the Museum of Science, as it worked at BU to increase attendance at sports events, and to both campus-sponsored events, and local Boston events.

9.2 Task Chart

Table 13: Task Chart

Task Chart: Boston Museum Project															
	Proposal Phase								Fieldwork Phase						
Week#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Task Week of	1-15	1-22	1-29	2-5	2-12	2-19	2-26	3-5	3-12	3-19	3-26	4-2	4-9	4-16	4-23
Proposal Phase															
Proposal Writing															
Introduction															
Background															
Literature review															
Methodology															
Draft survey															
Survey Discussion/Revision															
Experimental Survey															
Conclusion															
Predicted results															
Final edits & mail															
Liaison Contacts															
Liaison interview (Jan. 31, 2001)															
Discuss interview & background															
Discuss proposal															
History & Culture exercise															
Fieldwork Phase															
Move to Boston															
Conduct survey															
Prepare survey instrument															
Pretest & finalize survey															
Conduct survey (group)															
Prepare data (….)															
Analyze results (group)															
Present Results (group)															

9.3 Cynthia Mackey Interview Summary

Position:Vice President of Marketing

Present: The Museum of Science IQP Marketing Group, Suki Abbatiello

Interview Date: 03/29/01

- General Marketing Techniques The Museum of Science uses
    - Public Relations
    - Press Release pieces
    - Publications
    - Radio Stations
    - Advertisement agencies
    - JSI, marketing research
    - Invitations
    - Modifications of OMNI shows to appeal to general audiences
- Target Audience
    - Families (4-14)
    - Adults (25-44)
- Media
    - Work with ad agencies
    - Broadcast tv and radio
    - Print specific products
    - Promotions with tv and radio stations
    - The Museum of Science usually does not buy extensive time on college radio or on popular newspapers
    - MFA collaboration
    - WCVB TV
    - MIT Media Lab (Art)
- Budget
    - Approximately $1 million
    - Bass Ale working on promotion (Shackleton's)

9.4 Carole McFall Interview Summary

Position: Senior Media Relations Representative

Present: The Museum of Science IQP Marketing Group, Suki Abbatiello

Interview Date: 03/29/01

- College Night
    - September 13, 1999
        - 1,800 students
    - September 2000
        - 1,400 students
- Advertise
    - Student Source Boston
    - Bostonsource.com
    - Student affairs people
    - Flyers handed out at colleges and orientations
    - Coupons given out
    - Monday Nights
        - Good because The Museum of Science not open anyways, not losing money
    - College newspapers
    - Press release to college radio stations
- Ideas for Ms. McFall
    - Corporate sponsors (EMC, Verizon, Mercury, Teradyne, etc.)
    - Posters (Omni, etc.) at colleges
    - Showtime/Presentation schedules distributed at colleges

9.5 Cary Sneider Interview Summary

Position: VP of Programming at the Boston Museum of Science

Present: The Museum of Science IQP Marketing Group, Suki Abbatiello

Interview Date: 03/22/01

- Goals
- Current Science and Technology
- Everything to do with people
    - Omni/Planetarium
- Facilitate conversations
- Group dynamics
- Integrate Programs/Exhibits
- Form a single experience
- Train staff
- Shows are layered
- Discovery Center – targeted to kids
    - Otherwise – no age target
- Laser Shows – younger audiences
    - Planetarium Manager – Robin Simmons
        - Laser Fantasy
        - Luke Donaher – talk about advertising to college students
- Major Concept – Discount to College Students
    - Possibly when Family comes
    - Date with boyfriend/girlfriend possibility
- Surveying
    - Open-ended questions
- Membership
- $50 fee instead of $90
    - Talk to John Slakey – Finance Department
- Presentations (Full Animal)
- Linda Johnson – Human Resources

- Surveying – Internal
- Survey Options
    - Humanities/Science/Art
- "Hot Spots" – change
    - Mention Isabella Stewart Gardner Museum
- Return Visit
    - Incentives
- Surveying - External
- Visited The Museum of Science [at all rather than before]
- Program/Facility – Planetarium
- Specificity?? (Laserlight show, etc.)
- Return – before college ends (4 years)
- Hometown (at least State, possibly city)
- # 10 – return visit question
- John DeLisa – Assistant Dean at Suffolk University
    - Talk to Bullio about survey
- Amos St. Jermaine (Wentworth Institute of Technology)
    - Dean of Retention
    - Mention Professor Hanlan
- Consortium of Museums across the country
    - Franklin Institute
    - St. Paul Science Museum:St. Paul, Minnesota
    - Ft. Worth Science Museum
    - California Science Center
    - Oregon Museum of Science and Industry
    - Museum of Science and Industry in Chicago
        - Always free!!!
    - Marketing Strategies
    - Attendance Data
    - Contact them
    - Attendance

    - City of Boston Population: 585,000+
    - College Undergrads: 135,000+
        - Attending the museum: ???
        - Good/Bad: ???
- Data Analysis/Results
    - Real-Time Conversion
        - Excel/Access/MapInfo
        - Representation of Results
            - Internal/External
            - Age Group/College/Gender
            - Big Picture
- Surveys
    - Refusals

9.6 Luke Donaher Interview Summary

Position: Operations Manager for Laser Fantasy

Present: The Museum of Science IQP Marketing Group, Suki Abbatiello

Interview Date: 04/03/01

- Operations Manager – *LaserFantasy* – mid-20s
  - Outside Contractor – separate from The Museum of Science (7 years)
  - *LaserFantasy* – 3 sites:
    - Boston – Philadelphia - Seattle
  - 3 Divisions
    - Theaters and Planetariums
    - ESD: Educational School Division – mobile units
    - Productions – sponsored concerts (such as by EMC Corp.)
- Responsibilities:
  - Oversees and manages all shows
  - Answers to Robin Simmons and Cary Sneider (and The Museum of Science)
- Presentations specifically geared towards college students – none
  - Lack of marketing to college students – not feasible
    - Too many college students per square mile
  - Main demographic is mostly male (16-24)
  - Hot bands for shows:
    - Limp Bizkit, Pop Rocks (Britney Spears, N'Sync), Pink Floyd
- Shows
  - 3-4 new shows/year
  - Release of new shows:
    - Survey audiences (all 3 sites)
    - Marketing directors watch music reviews to predict 3 months
- Annual College Night
  - 4 shows that night
  - Chosen partly due to college age bracket
    - Beastie Boys, Rage, RHCP, Offspring, Electronika

- Resources?
  - Yes – effective at targeting appropriate audience
  - Use of radio stations
    - No midday time slots (classes)
  - Marketing department budget:
    - $55,000 operating Budget
- Results:
  - Boston = top grossing site even with smaller theater capacity
- Radio
  - Classic Rock: WZLX
  - Hard Rock: 107.3 (WAAF), 104.1 (WBCN), (WFNX)
  - Hip-Hop: 94.5 (JAMN), 97.7, AM 1610

9.7 Larry Bell Interview Summary

Position: Vice President of Exhibits

Present: The Museum of Science IQP Marketing Group, Suki Abbatiello

Interview Date: 03/20/01

- 40-person division
- Duties: identify, plan, design, install, rent exhibits; many daily meetings

- What is your operating budget?
    - $10 million – Museum of Science
- Blockbuster Exhibits
    - $500,000 - $1 million

- What do you look for in an exhibit?
    - Exhibits usually stay for about 3 months
    - Traveling exhibits – reason to return to the Museum of Science
    - Consortium with other museums around the country
        - Museum of Science and Industry in Chicago
        - Franklin Institute of Science
        - California Science Institute
        - Oregon Science Institute
        - COSI
        - Science Museum of Minnesota
        - Museum of Science in Fort Worth, Texas
        - Work with Exploratorium
    - Market Research
        - Focus Groups to determine if ideas for exhibits will do well
        - Ideas for exhibits that might be popular
    - Space walk – visit a space station
    - Einstein
    - Animation – hands-on

- Transportation in the 21st century – floating cars

- How do museums in general obtain blockbuster exhibits?
  - Must appeal to general audience (not normal audiences)
  - Make exhibits or find exhibits?
  - Star Trek – Star Wars
  - Ramses
  - Leonardo
  - Everest
  - Gems and Minerals
  - Exbitis about people's life events/stories work
  - China Exhibit
  - King Tut Exhibit – Egyptians were cheated by U.S. Art Museums
  - Art connection
  - Robotic dinosaurs

- Current Science and Technology
  - Focus was on hands-on exhibits – science in the past
  - Today's science abstract, current science
  - Constantly changing
  - Staff will present
  - Expand to Technology
  - New Wing
  - Big Crisis
  - Interactive problem solving exhibit
  - Brain scans
  - Possible negative effects
  - Portions of the brain reflect according to questions asked
  - Bionics
  - Test Lab
  - Cool Design Solutions

9.8 Robin Simmons Interview Summary

Position: Planetarium Manager

Present: The Museum of Science IQP Marketing Group, Suki Abbatiello

Interview Date: 04/03/01

- Planetarium Manager
    - 6 full-time employees, 1 contractor (Luke Donaher)
- Observatory Manager
- Shows at the Planetarium
    - Daytime: Astronom y
    - Evening: L aser Shows
    - Prposals:
        - Performing Arts Series
        - Jazz Musicians
        - Rock Musicians
            - (DMB/Aerosmith/local bands)
- Survey Question
    - Performing Arts
    - Chamber Music
    - Jazz
    - Storytellers
- Planetarium Shows for College Professors (classes)
- Lecture Series
- Observatory
    - Fridays from 8:30pm-10pm (Year-Round)
    - Tel: 617.589.0267

9.9 Internal Museum Survey

Gender: M F

1) **What college are you from?**

BU BC MIT HU WIT EMM SIM LES

SUF NU TU other_____

2) **Do you mind if we ask your class year and age?** (circle one)

Fr So Ju Se Graduate

17 18 19 20 21 22 23 24 other_____

3) **What is your major?** (circle one)

- ❑ **(H)** Humanities
- ❑ **(A)** Arts
- ❑ **(S)** Science

4) **How did you get to the MoS today?**

- ❑ **(D)** Drive
- ❑ **(T)** MBTA
- ❑ **(W)** Walk/Bike
- ❑ **(C)** Cab

5) **What other cultural locations have you visited in Boston?**

- ❑ **(M)** MFA
- ❑ **(F)** Fanuiel Hall
- ❑ **(A)** Aquarium
- ❑ **(T)** Theater District
- ❑ **(U)** Museum of Bad Art
- ❑ **(I)** Isabella Stewart Gardner Museum
- ❑ **(J)** JFK Museum
- ❑ **(B)** Boston Symphony Orchestra
- ❑ **(C)** Comedy Club(s)
- ❑ **(X)** Other_____

6) **Have you visited the Museum of Science before?**

- ❑ **(Y)** Yes
- ❑ **(N)** No

If yes for #6, when was your last visit?

0 ⇒ 6 months **(0)**
.5 ⇒ 2 years **(.5)**
2 ⇒ 5 years **(2)**
Greater than 5 years (5)

How often do you visit?

Every year **(1)**
Every 2 years **(2)**
Every 5 years **(5)**
Other_____ **(X)**

7) **How did you hear about the Museum of Science? (Please check all that apply)**

- ❑ **(N)** Newspaper article
- ❑ **(R)** Radio advertisement
- ❑ **(T)** TV advertisement
- ❑ **(S)** Some kind of flyer/handout
- ❑ **(A)** Family
- ❑ **(F)** Friends
- ❑ **(X)** Other _____

8) **What did you visit today at the MoS?**

- ❑ **(O)** Omni Show_____
- ❑ **(P)** Planetarium _____
- ❑ **(L)** Laser Light Show _____
- ❑ **(I)** Live Presentation _____
- ❑ **(E)** Exhibits_____
- ❑ **(X)** Other _____

_____

9) **Which exhibit/show did you like most?**

10) **Which exhibit/show did you like least?**

11) **Is there anything that you would like to see changed of added to the MoS?**

- ❑ **(O)** OMNI (enough variety?)
- ❑ **(P)** Planetarium (is it outdated?)
- ❑ **(L)** Laser Light Shows
- ❑ **(T)** Technological exhibits
- ❑ **(I)** More interactive exhibits
- ❑ **(X)** Other_____
- ❑ **(N)** NO

12) **Would you come back to the Museum for a return visit?**

- ❑ **(Y) Yes**
- ❑ **(N) No**

If yes for #12, would you return before your college graduation.

9.10 External Museum Survey

Gender: M F

1) **What college are you from?**

BCM BE BHCC BR BU BC MIT HU WIT

EMM EMR SIM LES SUF MCA NU TU UBOS

2) **Do you mind if we ask your class year and age?** (circle one)

Fr So Ju Se Graduate

17 18 19 20 21 22 23 24 other__ (X)

3) **What is your major?** (circle one)

- ❑ (**H**) Humanities
- ❑ (**A**) Arts
- ❑ (S) Science

4) **How do you usually travel around Boston?**

- ❑ (**D**) Drive
- ❑ (**T**) MBTA
- ❑ (**W**) Walk/Bike
- ❑ (**C**) Cab

5) **What cultural spots have you visited in Boston?**

- ❑ (**M**) MFA
- ❑ (**F**) Fanuiel Hall
- ❑ (**A**) Aquarium
- ❑ (**T**) Theater District
- ❑ (**U**) Museum of Bad Art
- ❑ (**I**) Isabella Stewart Gardner Museum
- ❑ (**J**) JFK Museum
- ❑ (**B**) Boston Symphony Orchestra
- ❑ (**C**) Comedy Club(s)
- ❑ Other___ (X)

6) **What media sources do you use to find out what weekend events are happening?**

- ❑ (**R**) Radio
- ❑ (**T**) TV
- ❑ (**W**) The Web
- ❑ (**N**) Newspaper
- ❑ (**F**) Friends
- ❑ (**E**) Email reminders

7) **Have you ever visited the Museum of Science?**

- ❑ (**Y**) Yes
- ❑ (**N**) No

If yes for #7, continue; (if no, skip to question #10) when was your last visit?

0 ⇒ 6 months (**0**)
.5 ⇒ 2 years (**.5**)
2 ⇒ 5 years (**2**)
Greater than 5 years (**5**)

How often do you visit?

Every year (**1**)
Every 2 years (**2**)
Every 5 years (**5**)
Other__ (**X**)

***Would you come back for a return visit?**

- ❑ (**Y**) Yes
- ❑ (**N**) No

8) **How do you know about the Museum of Science? (Please check all that apply)**

- ❑ (**N**) Newspaper article
- ❑ (**R**) Radio advertisement
- ❑ (**T**) TV advertisement
- ❑ (**S**) Some kind of flyer/handout
- ❑ (**A**) Family
- ❑ (**F**) Friends
- ❑ (**L**) Location
- ❑ (**S**) School
- ❑ (**X**) Other _____

9) **Do any of the exhibits or overall products interest you?**

- ❑ (**O**) Omni Show _____
- ❑ (**P**) Planetarium _____
- ❑ (**L**) Laser Light Show_____
- ❑ (**I**) Live Presentation _____
- ❑ (**E**) Exhibits _____
- ❑ (**X**) Other_____

10) **Is there anything that you would like to see changed or added at the MoS?**

- ❑ (**O**) OMNI (enough variety?)
- ❑ (**P**) Planetarium (is it outdated?)
- ❑ (**L**) Laser Light Shows
- ❑ (**T**) Technological exhibits
- ❑ (**I**) More interactive exhibits
- ❑ (**X**) Other_____

11) **Would incentives attract you to the museum?**

- ❑ (**F**) Free Nights at the Museum of Science
- ❑ (**S**) Student Discounts
- ❑ (**P**) Package Deal with other Museums
- ❑ (**X**) Other_____

12) **Are there any factors that prohibit you from attending the MoS?**

- ❑ (**Y**) Yes
- ❑ (**N**) No

If so, ask why?

- ❑ (**T**) Transportation
- ❑ (**C**) Cost
- ❑ (**E**) Time
- ❑ (**I**) Interest Conflict
- ❑ (**X**) Other_____