

**An Analysis of the Convention Center Market and Implications for the Planned Expansion
of the Boston Convention and Exhibition Center**

By

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Bachelor of Science, 2010
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**Submitted to the Program in Real Estate Development in Conjunction with the Center for
Real Estate in Partial Fulfillment of the Requirements for the Degree of Master of Science
in Real Estate Development**

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Massachusetts Institute of Technology

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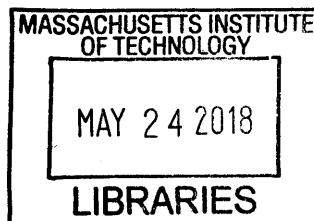
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ABSTRACT

The proposed expansion of the Boston Convention and Exhibition Center was approved by the Massachusetts legislature in 2009. In 2010, the governor put the expansion on hold citing an overstated economic impact. Proponents argue that expanding the convention center will lead to increased occupancy and significant economic benefits. But do the benefits outweigh the costs?

The first part of this thesis provides an overview of the convention center market in the US as well as two case studies of convention centers that have undergone expansions. The second part closely examines the history and performance of the Boston Convention and Exhibition Center using data from the Massachusetts Convention Center Authority along with data from various other sources to project realistic economic costs and benefits of the expansion as currently proposed.

Thesis Supervisor: William Wheaton

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Introduction

Purpose of the thesis

The purpose of this report is to provide an analysis of the convention center market and the implications for the proposed expansion of the Boston Convention and Exhibition Center (BCEC). The report will start with a general overview of the convention center product type and the market in the United States. Then it will look at specific case studies of different convention center expansions. The report goes on to examine the background and performance of the BCEC and its economic costs and benefits to the Greater Boston Area. In doing so, this report will attempt to determine whether the economic impact of the expansion merits the investment.

Hypothesis

Despite the growth in the convention center market over the past fifty years, there is a lack of serious academic study of this market. It remains a niche industry. As a result, the construction and renovation of convention centers is justified by studies that oftentimes have very optimistic assumptions regarding the future performance of a facility and neglect the economic costs of the project. The result is that cities and states finance these very large projects which often fall short of the projected economic impact. I believe that this is the case with the proposed expansion of the Boston Convention and Exhibition Center. The justification for the planned expansion is that it will improve the performance of the existing facility in terms of occupancy and overall economic impact. Expanding the size of a building to improve its occupancy runs counter to virtually all other forms of real estate. While I do not question that renovated/expanded facility will increase the number of events held in the convention center in the years immediately following its construction, I suspect that the long-term net economic impact will not justify expansion. Like many convention centers before it, I believe that the economic assumptions underlying the convention center expansion's feasibility are fundamentally flawed.

Research methodology

While there is not a significant amount of academic literature on convention centers, I have examined what is available. I have also examined historical statistics and financial statements provided by various authorities and governments that own and operate convention centers throughout the United States as well as numerous consultant studies regarding the projects. I have also reviewed industry data where available. I obtained detailed financial and occupancy data on the Boston convention market via a public information request to the Massachusetts Convention Center Authority and the Comptroller of the Commonwealth of Massachusetts. I also obtained detailed hotel data from Smith Travel Research, a firm that tracks supply and demand data for hotels. The data was used to estimate both the costs and the benefits of the planned expansion.

Results & Interpretation

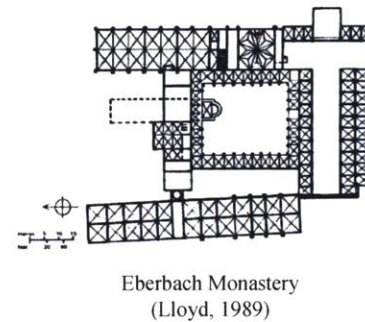
Overall, the actual net benefit of the expanded convention center is unclear. Assuming attendance increases (not guaranteed), the construction of the facility could generate a net positive economic impact depending on what would have been feasible on the site otherwise. The increased direct spending could be significant, but the resulting tax revenue generated by that spending would be insufficient to cover the cost of the building and operating the expansion.

The net result is a large decrease in the amount of tax revenue in the convention center fund that might be used for alternate uses (i.e. schools). The total increased hotel room demand resulting from the increased attendance would be sufficient to fill 20% of the additional supply created by the proposed 1,000-room hotel. Without clear evidence of a major economic benefit, the pursuit of the expanded facility should be closely examined and weighed against other potential uses of capital.

Convention Market Overview

Typology

A convention center is defined as a building or set of buildings designed to hold many people and used for meetings (Merriam-Webster, 2017). In terms of building design and layout, there are no widely agreed upon precedents for convention centers; however, the Cistercian Monastery building type has influenced modern convention center design. (Lloyd, 1989) This typology is defined by the following elements: a major built space, several secondary built spaces of various sizes, a courtyard and a cloister. While large meeting halls and perimeter hallways have been substituted for the courtyard and cloister, the general layout of many modern convention centers closely resembles those of monasteries that were built hundreds of years ago.

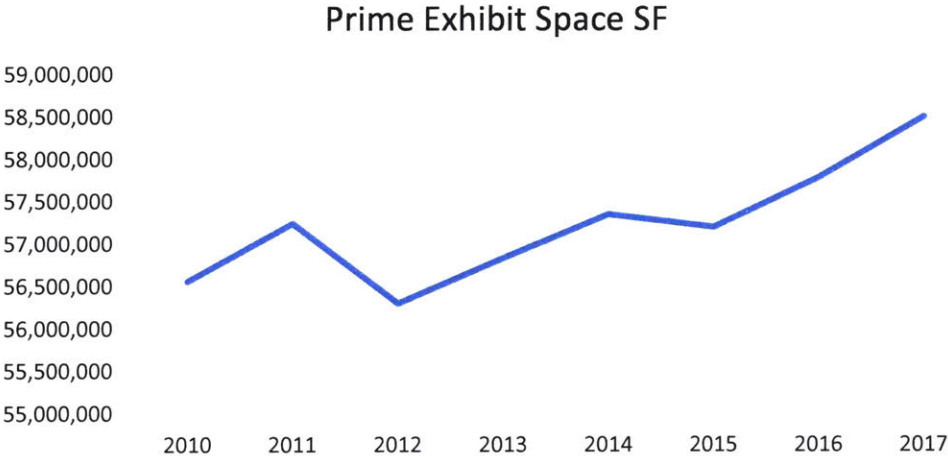


As the needs of conventions have changed over time, there has been a shift in the composition of convention centers that are constructed. Some early convention centers were simply large meeting halls. These facilities were built to host large local events and traveling trade shows. As the meetings and convention industry has grown over time, convention centers have begun to include more and more meeting space and flex space. This space is considered crucial in attracting large conventions which often hold breakout sessions in smaller meeting rooms in addition to event being held in the main exhibition halls. Today's large (over 350,000 square feet of prime exhibition space) convention centers in the US have an average of about one square foot of meeting space for every five square feet of prime exhibition space. To accommodate events that attract out-of-town visitors, many convention centers have attached or adjacent headquarters hotels. These large hotels are intended to guarantee large blocks of rooms to convention goers and provide easy access to the convention centers.

Supply

Over the past fifty years, there has been a boom in the construction of convention centers across the United States (Sanders, 2014). The largescale facilities built in major cities (New York City, Chicago, Atlanta, etc.) have spread to secondary cities (Boston, Portland, Denver, Seattle, etc.) and beyond. In the race to attract conventions and the attendee spending that accompany them, states and cities across the country have invested major sums of money into building and expanding their convention centers. While this sector represents a very significant amount of spending by government entities, the convention center market is not widely studied. There are very few resources tracking the supply and demand for space.

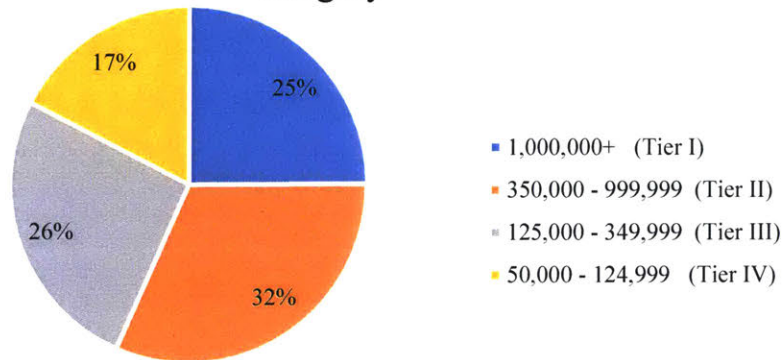
One source of data on the supply of convention centers is the annual World’s Top Convention Centers directory published by Trade Show Executive (TSE), a magazine that focuses on news related to the event industry. This directory includes details on the leading convention centers for trade shows, corporate meetings, conventions and consumer events. The primary metric tracked by TSE is prime exhibit space which is defined as space that is designated specific for exhibits (does not include outdoor space, meeting rooms or pre-function space). Other types of space include meeting space and flex space (multi-purpose space). According to the 2017 TSE directory, the US and Puerto Rico have a total of 250 convention centers with over 50,000 square feet of prime exhibition space that contain an aggregate of approximately 58.5 million square feet of prime exhibit space, 17.3 million square feet of meeting space, and 4.2 million square feet of flex space.



Source: Trade Show Executive's directory of the World's Top Convention Centers 2017

In general, prime exhibit space has been on an upward trend since TSE started publishing its directory in 2010. From 2010 to 2017, the TSE data suggests that the supply of prime exhibit space in the US and Puerto Rico has exhibited an annual growth rate of 3.4%. This doesn’t include the growth in meeting space or flex space that has occurred during this period. Going forward, continued expansion in these figures is anticipated. In fact, there are at least fourteen expansion/renovation projects in progress at convention centers across the country and include will collectively cost more than \$8.5 billion (See Exhibit II in the Appendix).

Share of total prime exhibition space by facility category



Source: Trade Show Executive's directory of the World's Top Convention Centers

Only ten convention centers fall under the Tier I category defined by TSE, meaning that they each contain more than one million square feet of prime exhibition space. Collectively, these facilities contain 25% of the total prime exhibition space of the facilities tracked by TSE. There are 32 Tier II convention centers, which contain an aggregate of 18.6 million square feet of prime exhibition space.

Tier I Convention Center	City	State	Prime Exhibit Space (SF)
McCormick Place	Chicago	Illinois	2,600,000
Orange County Convention Center	Orlando	Florida	2,100,000
Las Vegas Convention Center	Las Vegas	Nevada	1,940,631
Georgia World Congress Center Authority	Atlanta	Georgia	1,400,000
Sands Expo & Convention Center/ The Venetian and The Palazzo Resort Hotel Casino	Las Vegas	Nevada	1,245,262
Kentucky Exposition Center	Louisville	Kentucky	1,100,000
New Orleans Ernest N. Morial Convention Center	New Orleans	Louisiana	1,100,000
NRG Park	Houston	Texas	1,056,213
International Exposition Center	Cleveland	Ohio	1,050,000
Mandalay Bay Resort & Casino	Las Vegas	Nevada	1,043,030
Total	8 Cities		14,635,136
Average			1,463,514

In addition to the 14.64 million square feet of prime exhibition space, Tier I facilities have 2.75 million square feet of meeting space, 683 thousand square feet of flexible space and more than 1,200 breakout rooms. Tier II facilities have four million square feet of meeting space, 616 thousand square feet of flexible space and more than 1,800 breakout rooms.

Several of these facilities have either recently undergone expansion/renovation or are in the planning stages.

- McCormick Place in Chicago is the largest facility in the country, and recently undertook a \$650 million expansion that included an attached 10,000-seat stadium and a 1,200-room headquarters hotel.
- The Orange County Convention Center in Orlando is the second-largest facility in the country and is currently in the process of planning an 800,000-square-foot expansion that will include 200,000 square feet of flexible space, 60,000 square feet of ballroom space and a grand concourse.
- The Las Vegas Convention Center was recently approved for an additional 600,000 square feet of exhibition space, renovation of the existing halls and a 200,000-square-foot connector.
- The Georgia World Congress Center Authority recently built a new stadium on site and plans to expand the convention center by an additional 114,000 square feet to create a 1 million-square-foot exhibition hall.

There are also several major expansion and renovations in the Tier II category. Cities like Boston, New York, San Francisco, Denver, Miami Beach, Columbus (OH), and Nashville are all in the process of expanding or renovating their facilities. In the Tier III category, planned and ongoing expansions are occurring in Seattle, Novi (MI), Louisville, Dallas, Memphis, San Antonio, and Las Vegas. With all the planned and ongoing expansion, continued growth in the supply of convention center space in the US is anticipated.

Demand

Demand for convention centers is primarily driven by the meetings industry. Secondary drivers include a variety of other large-scale events such as sports, entertainment, and community events. There are relatively few sources of data on the demand within the exhibition industry.

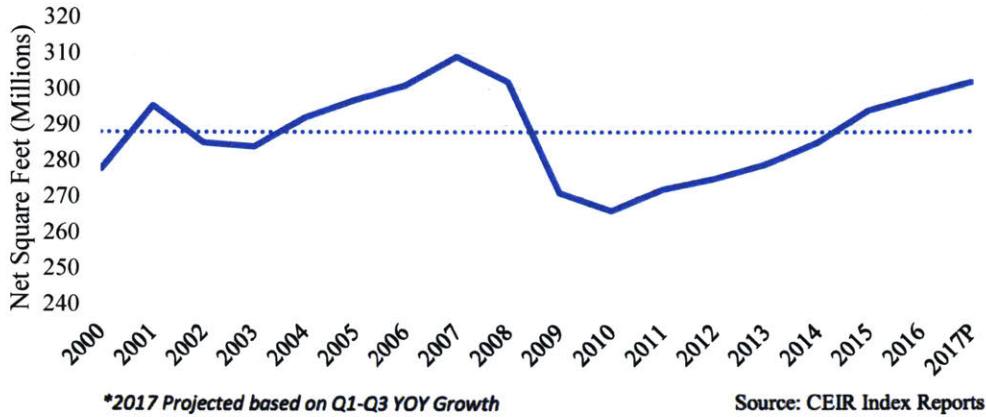
The Center for Exhibition Industry Research (CEIR), a non-profit professional organization for the marketing, promotion and importance of exhibitions, was founded in 1978 by the Trade Show Bureau. The aim of this group is to provide objective research on the meetings and events industry. The CEIR Index is a measure of the annual performance of the exhibition industry. It tracks four key metrics to determine performance:

1. Net Square Feet: the amount of exhibition space sold for revenue or in-kind services (does not include aisle space or meeting rooms)
2. Attendance: the number of professionals or buyers attending an event (for business to business exhibitions, this number excludes non-business attendees such as exhibiting company personnel and friends and family)
3. Exhibitors: the number of companies and other organizations occupying exhibit space at an exhibition (includes exhibit space traded for in-kind services and other on-cash considerations)
4. Real Revenue: the gross exhibition revenue generated from all sources, including the sale of exhibit space, conference fees, advertising, sponsorships, etc.

To assess changes in the demand for convention centers, the four metrics of the CEIR Index have been examined. Although not a complete representation of all the groups that could generate

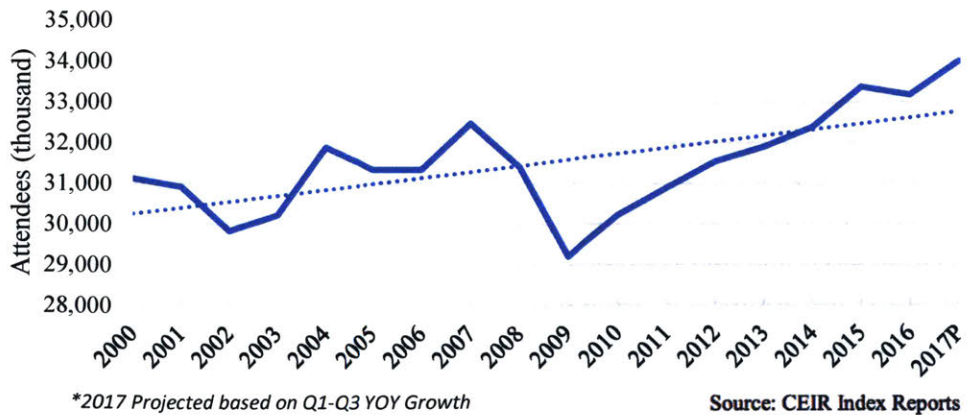
demand for this type of space, the business-to-business events (like those tracked by the index) are the primary targets for most convention center operators for reasons that will be discussed in detail later in this report.

Net square feet of business-to-business exhibitions in North America from 2000 to 2017



As shown, the demand for exhibition space is procyclical and lags the overall economy. Net square feet hit a low in the year after each of the last two recessions. It is logical that the NSF demanded by these types of events lag the overall economy because they are often booked years in advance. Overall, the trendline shows that the net square feet demanded is essentially flat. From 2000 to 2017P (projected by applying the year-over-year growth for Q1 to Q3 to the net square feet demanded in 2016), shows a total increase of 2.21%, which results in a CAGR of 0.13%.

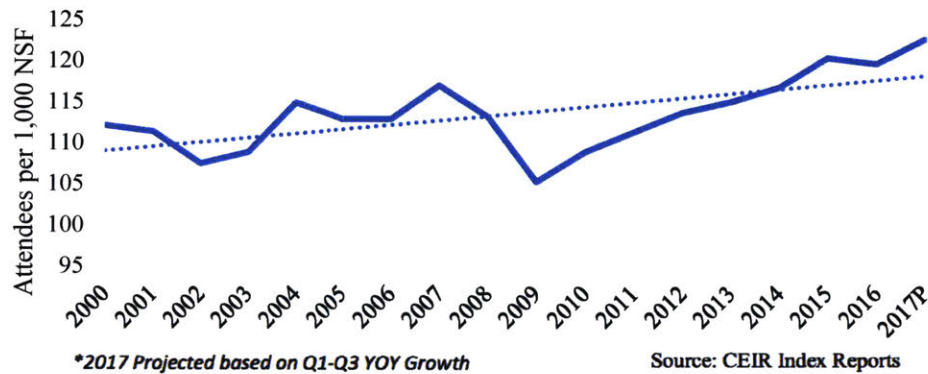
Attendees of business-to-business exhibitions in North America from 2000 to 2017, in thousands



Like net square feet, attendance data is mostly procyclical. Unlike net square feet, attendance has been on an upward trend since 2000 with total growth of 10.03%, or 0.56% per year. Since

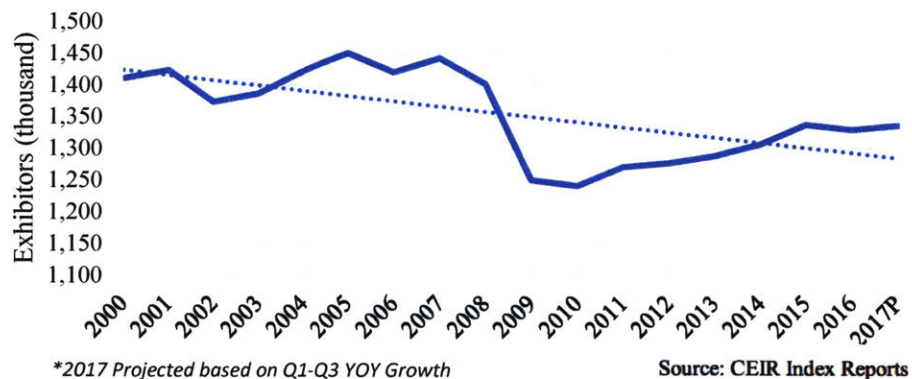
bottoming out in 2009 at 29.2 million attendees, it has grown approximately 16% to a projected 34.0 million in 2017.

Attendees per square 1,000 net square feet of business-to-business exhibitions in North America from 2000 to 2017



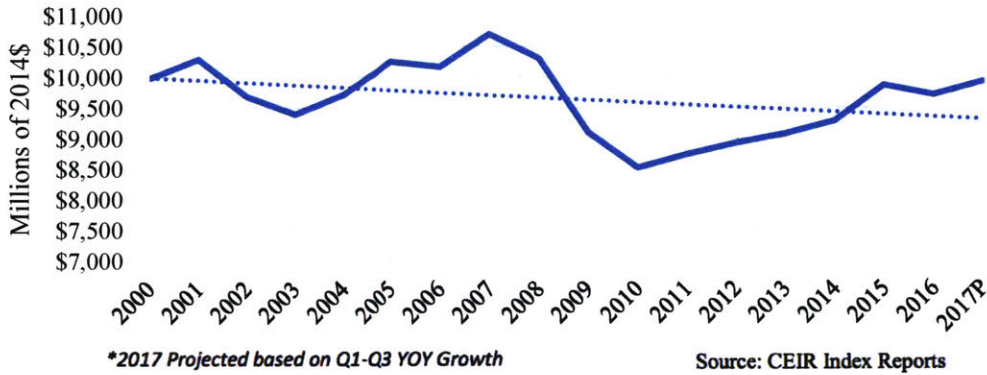
With the growth of attendees outpacing the growth in net square feet, the total number of attendees per square foot of exhibit space has increased over the past 17 years. Exhibitions are bringing in more people to about the same amount of space.

Exhibitors at business-to-business exhibitions in North America from 2000 to 2017, in thousands



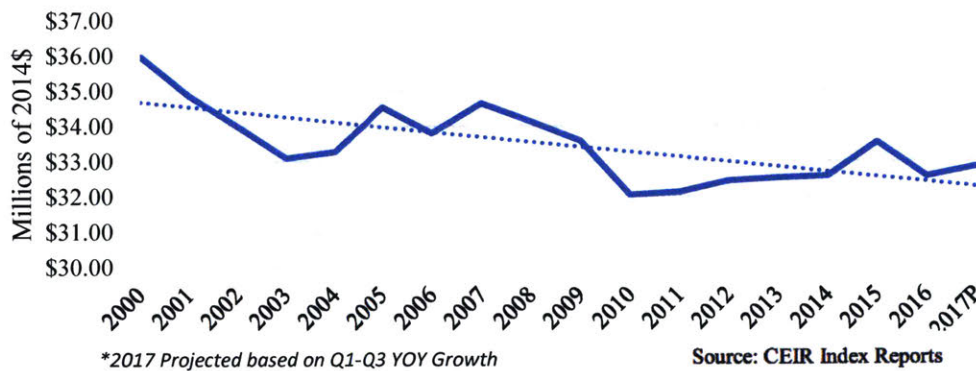
While net square feet and attendees have increased over the past 17 years, the number of exhibitors has been on a downward trend. There was a sharp decrease in the number of exhibitors in 2009, and that number has yet to return to pre-recession levels.

Real revenues of business-to-business exhibitions in North America from 2000 to 2017, millions of 2014\$



Real revenues from business-to-business exhibitions have also been trending downwards over the past 17 years. After peaking in 2007 at around \$10.7 billion, revenues decreased significantly from 2008 to 2010. Since then, real revenues have increased, but have not returned to their pre-recession levels.

Real revenues per square foot of business-to-business exhibitions in North America from 2000 to 2017, 2014\$



With fewer exhibitors comes a smaller pool of groups competing for exhibition space. Since the total amount of exhibit space has remained relatively flat, it is logical that the amount of revenue per square foot of space would decrease as the number of exhibitors decreases.

North American business-to-business exhibition trends

	Net square feet (NSF)	Exhibitors	Attendees	Real revenues
Total (2000 to 2017P)				
% Change	2.21%	-6.13%	10.03%	-3.68%
CAGR	0.13%	-0.37%	0.56%	-0.22%
Trough-to-trough (2002 to 2009)				
% Change	-4.91%	-8.96%	-2.08%	-6.07%
CAGR	-0.72%	-1.33%	-0.30%	-0.89%
Peak-to-Peak (2000 to 2007)				
% Change	11.31%	2.27%	4.37%	7.20%
CAGR	1.54%	0.32%	0.61%	1.00%
Peak-to-Peak (2007 to 2017P)				
% Change	-2.31%	-7.38%	4.73%	-7.38%
CAGR	-0.23%	-0.76%	0.46%	-0.76%

Source: CEIR Index Reports

According to the CEIR data (Exhibit I in the Appendix), attendees and net square feet increased from 2000 to 2017, but the number of exhibitors and real revenues have declined. The data generally shows troughs in 2002 and 2009. From 2002 to 2009, all the metrics tracked by CEIR decreased. From the peak in 2007 to the peak through 2017 attendees were the only tracked metric that increased. Revenues, exhibitors and net square feet all decreased. It is important to note that the peak in 2017 may not be a peak in the market. The most recent CEIR report is projecting further growth across all metrics in 2018. If the economy continues to grow, that seems likely based on the cyclical nature of the industry.

Overall, demand for convention space appears relatively flat. Attendance is trending upward, but space has not followed suit. The highly-cyclical nature of the demand for this industry means that it is very likely to decrease in the near future with the onset of the next recession.

Benefits

Why are convention centers built? Those who support convention centers point to the tremendous growth of convention centers, direct benefits to the community in which they are located, their impact on the hospitality sector (e.g. hotels, restaurants, entertainment, etc.), the indirect benefits, and the fiscal benefits. (Fenich, 1992)

Direct Benefits

The direct benefits associated with convention centers can generally be divided into two categories: community benefits and economic benefits. The community benefits include the overall contribution of a convention center to the built environment of a community while the

economic benefits include the cost of construction, the direct spending of the attendees and meeting planners and the jobs that are created to serve them.

Oftentimes, major convention centers require substantial investment in infrastructure to adequately service the building. This could include the construction of roads, installation of utilities, construction of recreational facilities, and others. While cities could undertake these infrastructure investments anyway, the convention center provides a justification for investment in a neighborhood that may not have otherwise merited the same level of investment without it. A convention center can also function as a communal space by providing space for local groups to hold meetings that might be too large for other facilities. For example, political rallies often use convention centers to accommodate the large number of attendees. In this case, the convention center provides a civic purpose instead of a purely economic-driven one.

Economic benefits are the primary justification for the construction of most convention centers. The first major economic impact that any convention center or convention center expansion might have, is impact of the construction itself. Like all construction, building or expanding a convention center can generate a significant amount of work and expenses. Before the facility is even fully-conceived, there are typically studies done by architects, planners and consultants. Once a facility has been planned, the construction includes significant sums of money for hard costs (site work, building materials, etc.) and soft costs (legal, design, engineering, insurance, contractors, etc.). While these costs are often included in the economic impact studies of facilities, their net contribution to the economic impact of a site is unclear. If the site in question were targeted for some other form of development (i.e. office, residential, or industrial), the construction of those buildings would generate comparable economic impacts.

Another major source of direct benefits is the spending of the attendees and the meeting planners. In 2012, PricewaterhouseCoopers LLP (“PWC”) and the Convention Industry Council released a report entitled *The Economic Significance of Meetings to the U.S. Economy*. According to PWC’s report, 225 million people attended meetings in 2012 which generated total direct spending of \$280 billion. Based on these figures, the average attendee generated direct spending of \$1,246, which included \$573 (46%) for travel and tourism and \$673 (54%) on meetings (planning/production, venue rental, etc.). A 2016 study by JD Power and Associates included an online survey of 13,000 respondents aged 18 and older, lived in the US and traveled to a top 50 US destination located more than 50 miles from their home in the prior 60 days. Of the respondents that traveled due to the location of an event/meeting, the average total spend was \$1,045.

While meetings undoubtedly generate a significant amount of direct spending, it is important to take a more nuanced look when examining this phenomenon in the context of the convention center market. Approximately 40% of the meetings attendees in the PWC study were locals from within 50 miles of the meeting locale. Events focused on local attendees have a significantly smaller impact on the overall economic impact of a given facility when compared to regional and national events. In some cases, they may have no impact at all because the event would have been held in alternate facility had it not been held in the convention center. These types of events effectively shift consumption patterns rather than generate economic impact for a

municipality. Instead of patronizing the food and entertainment options near their places of business or residences, the local attendees may patronize businesses located near the convention center. This shift in consumption is often counted in the economic activity generated by a convention center, but the loss of activity to businesses that are located further away from the convention center is not always considered. In those cases, the effect of the direct benefits is overstated when taken in the context of the overall region.

Indirect Benefits

The indirect communal benefits are a function of the direct communal benefits. Convention centers are often strategically used by communities as a tool to combat blight and spur investment in a particular area of a community. For this reason, many convention centers were built in former industrial neighborhoods located near city centers. In this function, the convention center works as a catalyst to help spur revitalization efforts. While a real estate developer might wait for the neighborhood to turn before investing the capital to construct new buildings, the presence of a major convention facility could put the developers at ease by providing some level of guaranteed demand for the hospitality sector. The BCEC in Boston exemplifies a facility that was built, in part, to help spur development in the now booming Seaport neighborhood which had long been targeted for redevelopment. Other convention centers have not been as successful in this endeavor. The largest convention center in the country, McCormick Place in Chicago, was originally constructed to spur development in the city's Near South Side neighborhood (Sanders, 2014). From 2008 to 2013, notices of foreclosure were filed on 20% of the commercial properties in the McCormick Place Entertainment District that surrounds the convention center (HVS, 2013). In response, the convention center authority spent \$650 million to build an arena and a headquarters hotel.

Indirect economic benefits include the indirect economic impact and induced impact. The indirect impact of a convention center includes the changes in sales, income or jobs in sectors within the region that supply goods and services to the hospitality sector. The seafood distributor that supplies fish to the local restaurants benefits from the increased demand that comes from a major convention coming to town. While the seafood distributor might not directly sell anything to the convention center, the distributor benefits from its presence. Another indirect benefit of a convention center that is typically included in its economic impact is the induced spending. Induced spending includes is the effect of additional rounds of recirculating the initial spectators' dollars (See Exhibit III in Appendix). In the case of the seafood distributor, the induced spending would be additional level of spending that the owner of the seafood distributor enjoys because of the profits generated by the increased demand associated with the convention center.

Assuming the revenue and jobs created by a convention center have a net positive impact on the overall economy of a community and do not cannibalize jobs from other parts of the community, the convention center can lead to increased tax revenue for the municipality in which the convention center resides. This tax revenue can take the form of increased property taxes in the area surrounding the facility, increased business taxes or income taxes. Theoretically, a convention center could also generate net income to a municipality; however, none such cases were uncovered during the research for this report. While a few facilities generated positive

operating income (New York's Jacob Javits Center, the Los Angeles Convention Center, the Miami Beach Convention Center, and the Tampa Convention Center), none remained positive when factoring in debt costs, depreciation and amortization.

Costs

Building or expanding a convention center requires numerous costs that need to be accounted for when examining feasibility. Like benefits, costs can also be categorized as direct and indirect.

Direct Costs

Direct economic costs include the actual financial cost of building and operating a convention center. As mentioned previously, the ongoing expansion/renovation projects collectively cost more than \$8.5 billion. Operating subsidies can run in the tens of millions of dollars per year and do not necessarily decrease if a convention center becomes more successful.

Direct community costs include the loss of land that could have served the community. Instead of going to a use that could fulfill a communal need (i.e. housing, retail, office, recreation, etc.) the land is dedicated to a use that typically focuses on tourists. The argument goes that the increased tourism helps the community and leads to other benefits; however, there is little proof that convention centers are more effective than more direct investments in the community.

In some cases, the actual physical presence of a convention center and its contribution to the built environment could be considered a cost. The transport of exhibits to and from the convention center can lead to an increase in truck traffic depending on the use that existed prior to its construction. Due to the size of the buildings, it is difficult to integrate them into the surrounding community. The largest convention centers effectively create a wall between one neighborhood and another. This is certainly the case in Boston where the seaport neighborhood is separated from the rest of South Boston by the BCEC. On the other hand, Boston's smaller Hynes facility is well-integrated into the fabric of the built environment.

Indirect Costs

Indirect costs of convention centers include the opportunity costs associated with their construction. While feasibility studies go to great lengths to provide a detailed analysis of direct, indirect and induced economic benefits of a facility's construction/expansion, the indirect costs are largely ignored. Research for this report did not uncover any examples of analysis of the opportunity costs of convention centers.

The construction or expansion of a publicly-owned or subsidized convention center necessitates the loss of productive land that could have been developed by a private entity. Like the convention center, a private development of similar scale would generate significant direct, indirect and induced economic impact. By developing with a site with a convention center, the economic impact of the private development is forgone with the hope that the impact generated by the center is greater than it would have been otherwise.

Funding convention center construction and expansion also necessitates a significant capital investment. While the investment might be funded by a tourist tax or special taxing district, in many cases, those funds could have been used towards an alternate use. When examining the

cost of a convention center, the potential economic impact of the most productive alternate use of capital should also be considered.

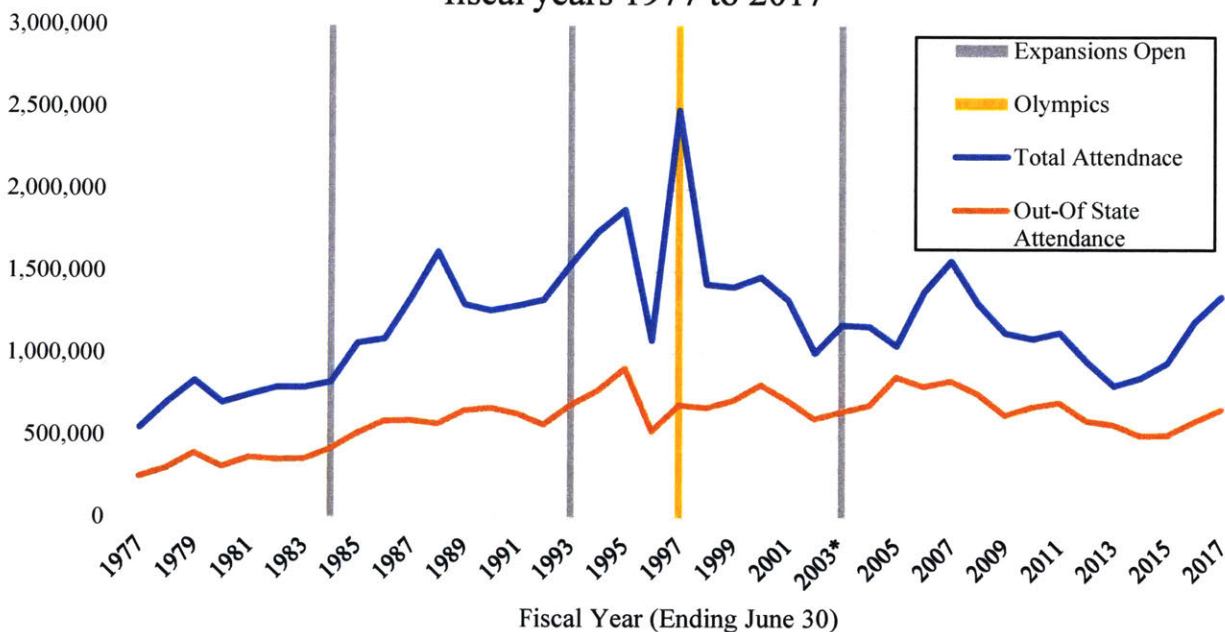
Expansion Case Studies

There are numerous examples of convention centers expansions in cities throughout the United States. Some of these expansions have led to increased occupancy and attendance, while others have done little to improve the performance of the facilities. Some have catalyzed development in their neighborhood, and others have not led to lasting change.

Georgia World Congress Center, Atlanta, Georgia

The Georgia World Congress Center (GWCC) has been expanded three times since it opened on September 8, 1976. The original facility had a total of 350,000 square feet of exhibit space and a 2,000-seat auditorium. In its first few years of operation, it generated annual attendance of over 700,000 people per year. In response to the performance of this facility, the state began exploring the idea of an expansion and commissioned a feasibility study in 1979 which found that expansion was appropriate (Sanders, 2014). Over the next few years, the expansion was planned and constructed.

Georgia World Congress Center attendance, fiscal years 1977 to 2017



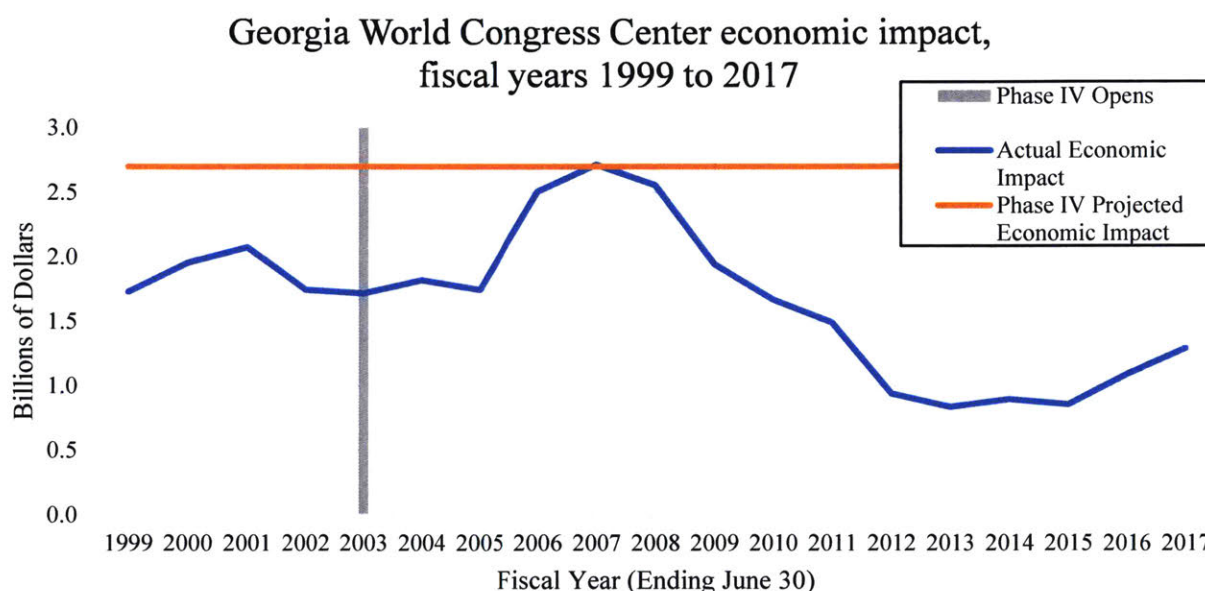
*GWCCA Annual reports did not include complete attendance data in 1994, 2003 and 2004. Where data is missing, attendance is estimated by multiplying the prior years' attendance by a ratio where the numerator is the economic impact of the missing year and the denominator is the economic impact of the preceding year.

Source: 1977-2017 Georgia World Congress Center Authority Annual Reports

The first expansion opened in 1983/1984 and included a total of 315,000 square feet of additional exhibit space in three new halls, 40 meeting rooms, a corporate and international

conference center, a ballroom, and an entrance concourse. This expansion, which almost doubled the size of the exhibition space at the facility resulted increased attendance at the center. Prior to expansion, the facility had averaged around 750,000 attendees per year including approximately 350,000 out-of-state visitors. In the years following expansion, the facility generated an average of around 1,300,000 attendees including 600,000 out-of-state visitors.

The second expansion was opened in August 1993 alongside the newly-constructed, 71,500-seat Georgia Dome. The Phase II expansion included a total of 310,000 square feet of prime exhibit space and was projected to generate an additional 200,000 visitors annually (Georgia World Congress Center Authority, 1993). In the years following the expansion (excluding fiscal year 1997 when attendance spiked due to the Olympics), the facility had average annual attendance of approximately 1,400,000 including 700,00 out-of-state visitors.



Source: 1999-2017 Georgia World Congress Center Authority Annual Reports

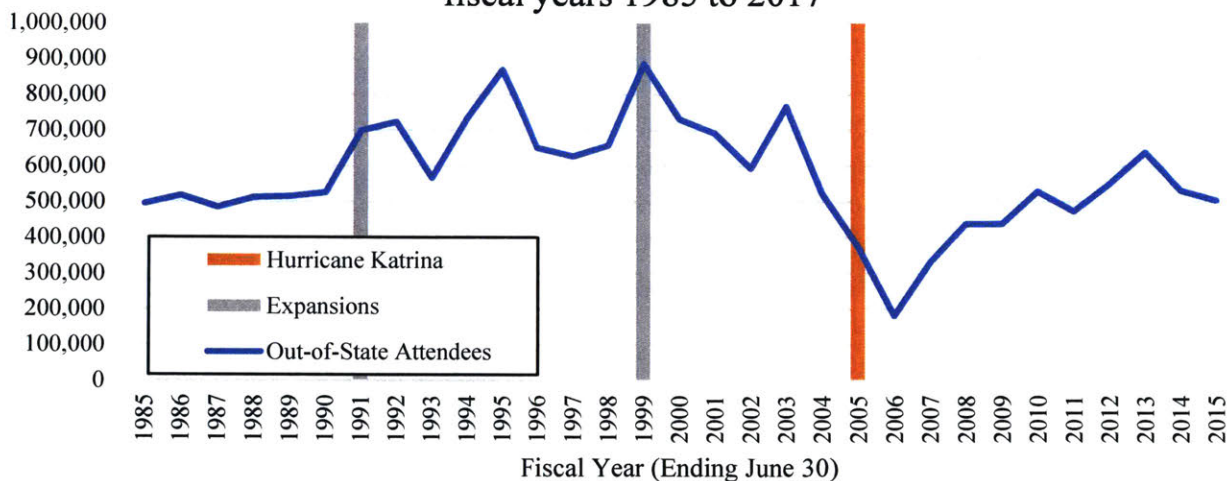
The third expansion opened in June of 2002. The 1,400,000-square-foot Phase IV included 420,000 square feet of exhibition space in four new exhibit halls, bringing the total exhibition space in the facility to 1,385,000 square feet. The balance of the expansion included a 25,700-square foot ballroom, 29 meeting rooms, and two auditoriums. The new facility was intended to be able to accommodate two to three shows at one time and generate an additional \$1 billion in economic impact per year. Considering the GWCCA estimated the economic impact of the facility at \$1.7 billion in fiscal year 2002, an additional billion dollars would have been a very substantial increase in out-of-state attendance. With the new expansion, the GWCC managed to hit the projected \$2.7 billion of economic impact in 2007 but fell short every year since. Total attendance and out-of-state attendance remain below their peaks in fiscal year 1995 (excluding the Olympics in 1997).

Overall, there are many lessons to be learned from the expansions of the GWCC. While the first expansion seemed to produce lasting benefits in the form of increased attendance, the subsequent expansions did not yield the same results. There were bumps in the years immediately following the expansions; however, the overall increase in attendance was not sustained. With more than double the amount of exhibition space, the facility generated roughly the same number of out-of-state visitors in fiscal year 2017 as it had in 1990. The most recent peak in out-of-state attendance was in 2005 with 866,114 attendees. This figure is almost 50,000 fewer attendees than the 1995 peak of 914,043 out-of-state attendees when the facility had 30% less exhibition space.

New Orleans Ernest N. Morial Convention Center, New Orleans, LA

The New Orleans Ernest N. Morial Convention Center was originally constructed as part of the 1984 Louisiana World Exhibition, a six-month World’s Fair that generated less-than-expected attendance and ended in bankruptcy. While the fair failed to bring the attendance that was expected by the owners of the 6,000 new hotel rooms that were built in the years leading up to it, the new hotel stock provided a base for the newly-constructed convention center (Marcus, 1985). At the time of construction, the facility contained 380,000 square feet of exhibit hall space (Cotter, 2008).

New Orleans Ernest N. Morial Convention Center attendance, fiscal years 1985 to 2017



Source: Ernest N. Morial New Orleans Exhibition Hall Authority, Continuing Disclosure Report (YE 12/31/2015)

The “Phase II” expansion of the New Orleans facility was completed in 1991 and doubled the size of the facility’s contiguous exhibition space to approximately 700,000 square feet. In the years following the expansion, the facility averaged around 690,000 out-of-state visitors, an increase of around 38% according to data reported by the authority.

After seeing continued increases in out-of-state attendance, a “Phase III” expansion was planned. The latest expansion brought the total contiguous exhibition space at the facility to 1.1 million

square feet making it one of the largest convention centers in the country. The second expansion did not have the same impact as the first. While the facility reached an all-time high in out-of-state attendance in Phase III's first year, out-of-state attendance decreased significantly in the years that followed. By 2004, out-of-state attendance decreased to a level not seen since 1990 when the center was significantly smaller. Hurricane Katrina hit in August 2005 and the convention center functioned as a makeshift shelter. This further depressed attendance at the facility and led to several months of lost business.

While out-of-state attendance has increased since 2006, attendance levels in recent years has remained significantly below the levels seen in the mid-1990s when the convention center had a significantly smaller footprint. To remedy the attendance levels, a major mixed-use project has been proposed for neighborhood surrounding the facility on land that was originally purchased for \$45 million in 2000 with the intent of expanding the convention center's exhibition space by an additional 500,000 square feet. Those expansion plans were abandoned in the years that followed when the convention center realized that the additional space would not be needed. After several years of negotiations, negotiations for the mixed-use development project proposed have stalled.

Boston Convention & Exhibition Center

History of Convention Centers in Boston

Boston has had a major convention center since the construction of the War Memorial Auditorium in 1965 (subsequently renamed to Hynes Veterans Memorial Auditorium) which was built as part of a \$90 million development program that included several projects throughout Boston such as the Boston Common underground garage, the Scollay Square district, the Government Center and others. The building, which was attached to the Prudential Center, was expected to make Boston a major destination for national and international conferences and was one of the largest buildings of its kind in the country (O'Connor, 1995). It had over 150,000 square feet of exhibition space, seating for up to six thousand, a nine-hundred-person meeting room and several smaller rooms.



(Prudential Center, Boston, MA, USA, 1964)

From 1975 to 1980, business done by the facility doubled making the convention industry Greater Boston's third largest industry behind financial services and governmental and institutional services (Yudis A. J., Hub Conventions Need More Room, 1980). In 1980, Massachusetts passed Proposition 2 ½ which limits property tax assessments to 2.5% of the assessed value and limits the annual increase in property taxes to 2.5%. The following year, the city's Proposition 2 ½ study commission suggested that the Hynes facility be closed because the facility was running a \$1 million annual loss and had to be subsidized by the taxpayers (Vennoch, 1981). Instead of closing the facility, the legislature pursued an increase on the hotel-motel tax that would be used to fund the center's operating loss (Hynes Expected To

Remain Open, 1981). While the planned hotel-motel tax did not pass, new taxes for deed transfers and new hotel rooms came as part of a bill passed in 1982 that also included the creation of the Massachusetts Convention Center Authority (the "MCCA"), which was directed to purchase the Hynes Convention Center and the 1,550-space Boston Common garage from the city of Boston. The inclusion of the Boston Common garage was intended to subsidize the MCCA's operation and expansion of the Hynes Convention Center (Boston Globe, 1982). The bill, known as the Tregor Bill, also provided a \$100-million bond authorization to carry out the expansion of the Hynes facility to meet the demand of the 5,000 hotel rooms being built throughout the city (Quill, 1982). In 1983, the MCCA voted unanimously to shut down the Hynes Auditorium while the facility was expanded (Mohl B. A., 1983).

Beginning in 1985, the MCCA razed the existing auditorium to construct the new and improved John B. Hynes Veterans Memorial Convention Center. The building was constructed with \$200 million in tax-exempt bonds (the "1984 Series A" and "1985 Series A Bonds") and increased the capacity of the old facility by approximately 9%. At the time of construction, it was suitable for 95% of all conventions held in the nation (The New York Times, 1986). The main difference between the new facility and the old one was the addition of meeting rooms which were intended to help the facility attract large conferences that would bring visitors from outside the Boston region. To pay for the operation of the facility and the cost of its construction, Massachusetts set aside a fund created from 20% of Massachusetts' 5.7% tax on hotel and motel rooms (Globe State House Bureau, 1987).

Many considered the expansion of the Hynes facility a "boondoggle" because the city already had sufficient convention space thanks to the privately-owned Bayside Expo Center in Columbia Point. The Bayside Expo Center was originally opened in 1965 as a shopping center, but failed to retain its tenants and was left completely vacant by 1973. In the following years, several new development ideas were proposed before the facility was reopened in 1983 as the Bayside Exposition Center. The new facility was intended to provide a home for the "gate shows", which were previously held at either the Hynes or Commonwealth Pier (Yudis A. J., 1983).

Around the same time that the Hynes was being expanded, the city of Boston gained another convention facility in South Boston. Commonwealth Pier was originally constructed in the early 1900s as a holding facility for maritime cargo. After ceasing operations as a pier in the 1970s, the facility was targeted for redevelopment by Massport. In 1982, Massport announced plans for a "merchandise mart and convention center for the high tech and communications industry" to be known as Boscom (from Boston Communications) that would include 200,000 square feet of conference and convention facilities; up to 450,000 square feet of permanent showrooms that would house over 200 companies and associated parking/support facilities (Yudis A. J., \$85 Million High Tech Center Planned for Commonwealth Pier, 1982). While the facility was under construction in 1985, the name of the facility was changed to the World Trade Center and the facility secured 25 commercial exhibitions that would keep it fully occupied through 1988 (Howe P. J., 1985). Unlike the Hynes facility, this facility was developed, owned and operated by a private partnership between a subsidiary of Fidelity and The Drew Companies.

The newly-renovated Hynes facility was opened on January 21, 1988. At the time, the Hynes was expected to draw \$500 million annually into Boston's economy from out of state visitors, create more than 8,000 jobs, and generate more than \$40 million in tax revenue (Patterson, 1988). By January of 1990, the Hynes was running short on funds for operations and, much to the chagrin of local hotel owners, announced that it would be pursuing other events traditionally held in hotels such as weddings, proms, business meetings, bar mitzvahs, etc. (Mohl B. , 1990). This practice would put the Hynes in direct competition with the hotels that it was built to support. Many of these events, which are primarily attended by locals, do not actually generate additional economic activity above what would have been generated had the convention center not existed; therefore, they fall outside of the intended use of the publicly-financed facility.

In the early 1990's, the state aid to the city of Boston decreased under the Republican administration of Governor Bill Weld which forced the city to rely more heavily on property taxes as a source of revenue. At the same time, Boston's property taxes decreased because of the collapse of the city's real estate market during the recession, so the city began actively promoting economic development, which represented a shift from the 1980's when development in the city was fueled by the city's strengthening industries (DiGaetano, 1997).

Less than five years after the expansion of the Hynes was completed and shortly after plans were finalized for a new Boston Garden, a proposal for a new convention and sports facility was before the Massachusetts legislature. The proposed facility, which was referred to as the Megaplex, included a 70,000-seat stadium that would serve the dual purpose of providing a home to the New England Patriots and functioning as an event space for the attached convention center. Having both uses within a single facility was intended to create synergies between the two that would allow the facility to attract major sporting and political events. In January of 1994, the Patriots were sold to the owner of Foxboro stadium and much of the support behind the new domed-stadium component of the Megaplex died out (Howe P. J., Sale of Patriots, 1994).

Within the legislature, the two original groups, supporters and detractors of the Megaplex, were accompanied by a third group that solely supported the convention center portion of the facility (Howe P. J., Malone Says a Stadium Can Wait Urges Making Convention Site the Priority of Megaplex Plan, 1993). The loss of the Patriots to anchor the Megaplex, this third group became more important. Numerous consultant studies were commissioned to further examine the feasibility of the project both with and without the attached stadium. One issue with building the new convention center that arose was whether it would hurt the existing Hynes facility. According to the study done by a consultant hired by the MCCA, the new center and the Hynes would serve different markets because the new center would primarily serve large trade shows that require substantial exhibit space while the Hynes primarily hosted smaller meetings of professional groups (Kindleberger, 1993). This directly contradicted the goal of the Hynes which was to attract large conventions that would bring attendees from outside the Boston area who would spend money on hotels, restaurants, tourism and shopping.

As the public continued to debate the merits of a newer and larger convention center, departures of two major conventions occurred. In 1996, the city's fastest growing trade show, Internet World, announced that it would be leaving Boston because the existing convention facilities in

the World Trade Center were insufficient to accommodate the show (Auberbach, 1996). In September of 1997, it was announced that MacWorld Expo, Boston's biggest annual convention which attracted about 50,000 annual attendees, would be leaving Boston in favor of New York's Jacob Javits Convention Center due to New York's robust creative community as well as lack of adequate convention space in Boston (Muller, 1997).

In November of 1997, the legislature overrode a veto from the acting governor to pass a plan for a new \$700 million convention center in South Boston that would be developed by the MCCA. The acting governor, Anthony Cellucci, was in favor of the convention center, but against instating a tax without holding a referendum, a notion that was summarily dismissed by proponents of the bill because the taxes would primarily be imposed on tourists and not residents (Cassidy, 1997). In addition to authorizing the MCCA to design, construct and operate a new convention center, the bill instructed the MCCA to take over and renovate the Springfield Civic Center (Massachusetts General Legislature, 1997).

Over the course of 1998, the newly-formed MCCA engaged in a marketability study to determine if the market could support another convention center and how it should be built. One major issue raised by the marketability study was the lack of hotel rooms in the area. The convention center would be competing against facilities in other cities that had thousands of rooms within the immediate surrounding area. At the time, MCCA board members estimated that they would need at least 3,500 to 4,000 rooms within walking distance of the new facility to ensure that it is able to compete and estimated that the rooms would be constructed when the center opened (Primack, 1998). Despite the lofty estimates, there was general agreement amongst the board, the consultants and the politicians that a headquarters hotel was a necessary component of the new center. By the end of 1999, a partnership between Starwood Hotels & Resorts and Carpenter & Co, a local developer, had won the contract to build a \$260 million, 1,120-room headquarters hotel.

Ground broke on the new Boston Convention and Exhibition Center in late 2000. Early estimates of the construction costs suggested that the new facility would be more than \$100 million over the \$750 million budget. In response, the MCCA cut \$50 million from the budget by decreasing the size of the new facility by 84,000 square feet, selling the center's heating and cooling plant to an energy company and making several engineering refinements. From 2000 to 2002, the new convention center struggled to secure new shows in face of the major downturn in the economy, a lack of nearby hotel rooms and steep competition from newly-expanded/constructed facilities in other cities (Vaillancourt, 2002). By 2002, the BCEC began offering free rent to potential conventions to boost demand for the center which, at the time, had only secured eleven firm bookings in its first decade (Palmer, 2002). By April 2004, a total of 15 large events had been secured for the 2005 fiscal year, which was 19 fewer events than what had been projected by the 1997 feasibility study had predicted for the original 600,000-square-foot BCEC design.

After years of stalling and renegotiating the original agreement, groundbreaking for the \$203 million Westin convention headquarters hotel took place in May of 2004. The first phase of the hotel would include 790 rooms completed by 2006, with the option to expand by an additional

330 rooms within 10 years. The City of Boston spent \$18 million for street and infrastructure repairs near the site to support development of the hotel.

On the first day of conventions, the BCEC hosted the MacWorld Conference & Expo and employee meetings for the German software developer SAP. MacWorld, a convention whose move to New York helped spur legislation that led to the construction of the BCEC, returned with approximately 1/6th of the attendees that it had the last time it was held in Boston. Months after the show was held, the organizer announced that it would be moving the show back to the Hynes facility because it was unable to fill the large halls of the BCEC.

In the years following the opening of the BCEC, the facility saw steady increases in the numbers of conventions and attendees. By the summer of 2007, just three years after the facility opened, the MCCA was calling for firms to submit a master plan for expanding the convention center into the 22-acre site towards the rear of the building. According to Gloria Larson, the MCCA board chairwoman, a phase II had always been part of the plan and the existing facility had exceeded expectations (Howe P. J., Convention hall sees success, looks to grow - Officials will seek master plan to build on 22 acres at South Boston complex, 2007). In fiscal year 2007, the BCEC hosted 146 events that drew 449,900 attendees who demanded 351,400 hotel room nights (Sasaki; TVS; CSL, 2009). While 2007 represented a record for hotel nights generated by the BCEC, it was far below the 645,000 nights projected by the 1997 feasibility study.

From 2007 through 2011, the plan to expand the BCEC continued to evolve. MCCA chief James Rooney identified a need for more hotel rooms and pushed for a 1,200-room headquarters hotel that would require up to \$200 million in subsidies. Studies from consultants (HVS and Convention Sports & Leisure) were used to justify both the hotel and a major expansion of the BCEC that would effectively double its size (Casey, 2011). By June 2014, a bill to allow the issuance of \$1 billion of bonds to finance the expansion had passed the Massachusetts House and Senate. The planned expansion would add a total of 1.3 million square feet of exhibit space, ballrooms, meeting rooms and the 1,200-room headquarters hotel.

In April of 2015, the Baker administration stopped the \$1 billion expansion plan over concerns that its economic impact had been overstated and replaced seven of the 13 board members of the MCCA. According to Baker, “the Seaport District has experienced an economic boom, ...[and] plunging ahead now, when the data on the expansion’s feasibility is mixed, combined with the change of leadership at the MCCA would be irresponsible given the vast amounts of taxpayer dollars necessary to not only build but operate the expanded facility in the face of pressing financial needs outside of the booming Seaport District.” (Carlock, 2015).

In June 2016, the new MCCA chief, David Gibbons, indicated that he would not be pursuing an expanded convention center until more hotel rooms are built. Later that year, Massport bid out a 1,000-room headquarters hotel that would seek to fill that void. The winner of the bid to build the hotel, which had been in the work for several years, was a partnership between Harold Brown, the Davis Companies, and Omni Hotels & Resorts.

With a new headquarters hotel on the way, the MCCA’s plan to expand the BCEC has reemerged. On August 2, 107, the MCCA released a request-for-proposal for master planning and feasibility services. The objectives of the RFP are as follows.

- Meet the needs of current and future customers, connect the BCEC into the host South Boston neighborhood, the Fort Point Neighborhood and South Boston Waterfront, engage City of Boston and State agencies and other key stakeholders
- Outline a building program that is financially self-sufficient, maximizes the MCCA’s competitive advantage in a rapidly evolving global convention and meeting marketplace
- Continue to showcase Boston’s status as a world class city.”

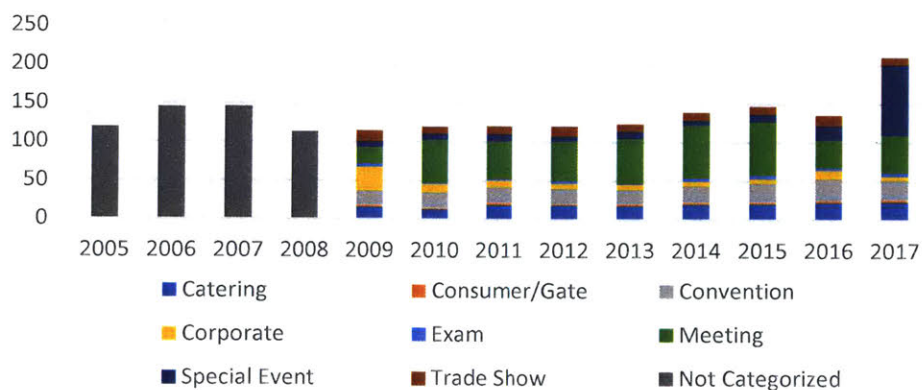
While the RFP did not explicitly instruct planners to consider an expansion, the RFP noted the need for more hotel rooms to “support any future campus growth”. Seven teams responded to the RFP and a decision is expected in the first quarter of 2018.

Historical performance of the BCEC

To assess the historical performance of the BCEC, data was obtained from public sources (periodicals, websites, etc.); the 2009 BCEC Strategic Development Plan prepared by HVS, Sasaki and CSL; and via several information requests to the MCCA and Comptroller of the Commonwealth. Financial data regarding the operations of the BCEC was obtained from the annual reports for the MCCA. Data on events that occurred at the Hynes and BCEC from July 2008 through December 2017 was provided directly by the MCCA. This included the event name, event type (corporate, trade show, convention, etc.), move in date, event start date/time, event end date/time, move out date, total attendees, total hotel room nights, peak room nights, economic impact category (short term, bullseye, non-bullseye) and whether an exhibition hall was used. Data on tax revenue collections was provided by the Comptroller of the Commonwealth.

Events

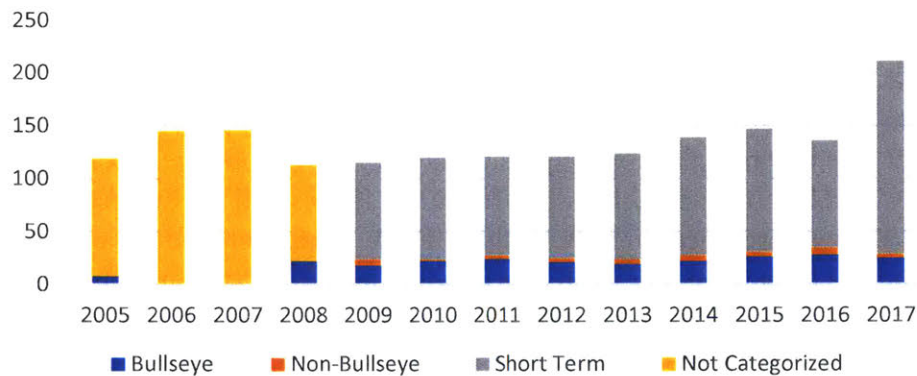
BCEC Events
Fiscal Years 2005 to 2017



Source: MCCA Data, 2009 BCEC Strategic Development Plan

Since opening the BCEC hosted more than 1,700 events. The total number of events increased from a low of 113 events in fiscal year 2008, to a high of 211 events in the 2017 fiscal year. On average, the BCEC had 131 events per year. Fiscal Year 2017 saw a large jump in the number of events held at the BCEC. This was primarily attributable to an increase in the number of special events from 19 in 2016 to 98 in 2017. The data suggests that the increase was a result of the private rental of the outdoor space at the BCEC that is referred to as the “Lawn on D”. In fiscal year 2016, there were 12 “summer outings” and 2017 brought 77 of these events which had not occurred in the earlier years. Excluding special events, BCEC’s total events have trended downward since their recent peak in fiscal year 2015.

BCEC Event Type
Fiscal Years 2005 to 2017

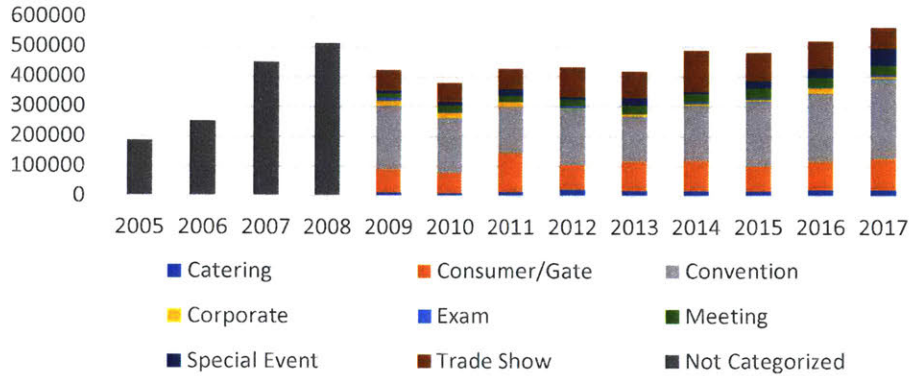


Source: MCCA Data, 2009 BCEC Strategic Development Plan

The MCCA categorizes its events by their level of economic impact. “Bullseye” events, the most economically impactful, are events that use at least one exhibition hall and generate 1,000 or more peak nights. For the fiscal years where data was available (2005, 2008-2017) the BCEC had an average of 21 bullseye events per year. Fiscal year 2016 had the most bullseye events of any year with 28 bullseye events.

Attendance

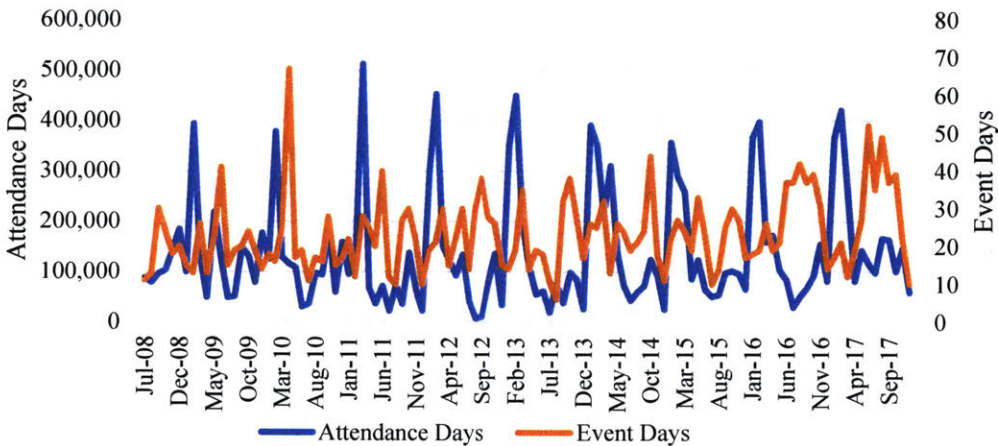
BCEC Attendance
Fiscal Years 2005 to 2017



Source: MCCA Data, 2009 BCEC Strategic Development Plan

Overall attendance at the BCEC has grown significantly since the first year of operations. After peaking in fiscal year 2008, attendance decreased significantly in 2009. Attendance been on an upward trend in recent years and reached a new high in fiscal year 2017 with a total attendance of 564,143 people.

BCEC attendance days and event days, monthly total

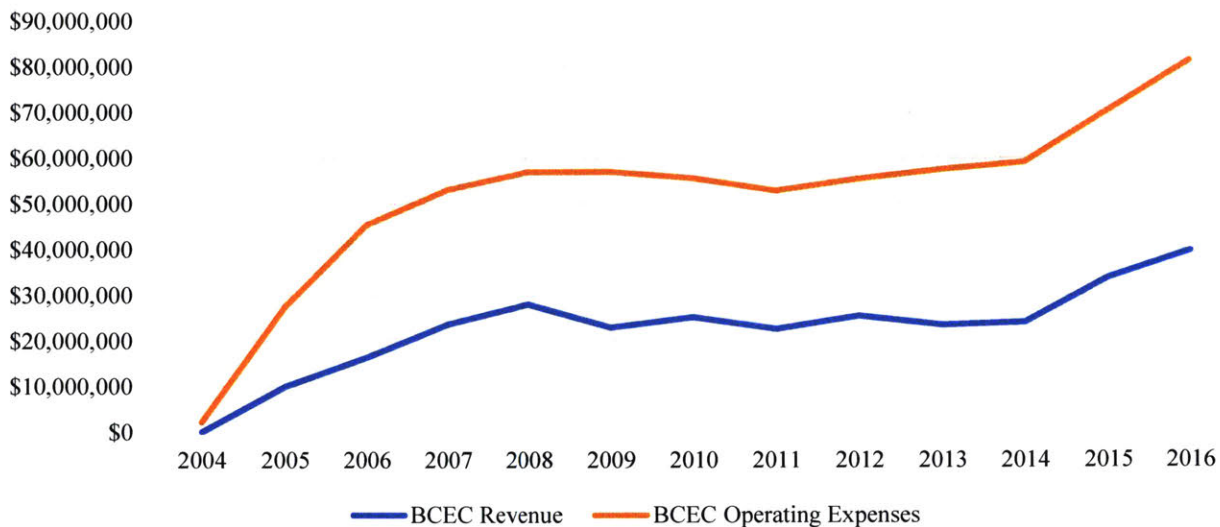


Source: Massachusetts Convention Center Authority

Attendance at the BCEC is very seasonal. The highest attendance is generally in the winter months when several large annual events occur including the New England Boat Show, New England Grows, and the Yankee Dental Congress. While attendance peaks in winter months, late summer and fall typically see the highest number of event days.

Financial Performance

BCEC Operating Revenue & Expenses



Source: MCCA Financial Statements 2002 - 2016

From the time it opened its doors in 2004 through the end of the fiscal year 2016 (ends June 30th, 2016), the BCEC had a cumulative operating loss of almost \$380 million. The operating loss included approximately \$244 million of depreciation and excludes the BCEC’s share of the more \$220 million of central administration and sales/marketing costs that were incurred by the MCCA from fiscal year 2004 through fiscal year 2016. The total gap between operating costs and operating expenses has increased from approximately \$17.5 million in the first full year of operations (FY 2005) to approximately \$41.7 million in 2016; however, the operating ratio (revenue/operating expenses) has increased from 0.36 to 0.49 meaning that the revenue generated by the center is covering a higher percentage of the operating costs.

Financing & Taxes

The existing BCEC was financed with special obligation revenue bonds that were secured by the Convention Center Fund established by Chapter 152 of the Acts of 1997. The fund generates revenue from fees and surcharges imposed on tourism-related activities that are summarized on the following page.

- Room Occupancy Taxes
 - 2.75% Convention Center Financing Fee – All hotels in Boston, Cambridge, Springfield, and Worcester
 - 5.7% Room Occupancy Tax – All hotels within the BCEC Finance District; hotels opened after July 1997 in Boston and Cambridge; hotels opened after July 2000 in Springfield
 - 4% Local Option Room Occupancy Tax – Hotels opened after July 2000 within the Springfield Convention Center Finance District
- Other Taxes and Fees
 - 5% Retail Sales Tax – Any establishment opened after 1997 within the BCEC Finance District; hotels opened after July 1997 in Boston and Cambridge; hotels opened after July 2000 within the SCC Finance District; any establishment within the MassMutual Center
 - 5% sightseeing surcharge in Boston
 - \$2 per day Parking Surcharge at any Convention Center Parking Facility
 - \$9 per contract Vehicular Rental Surcharge in Boston

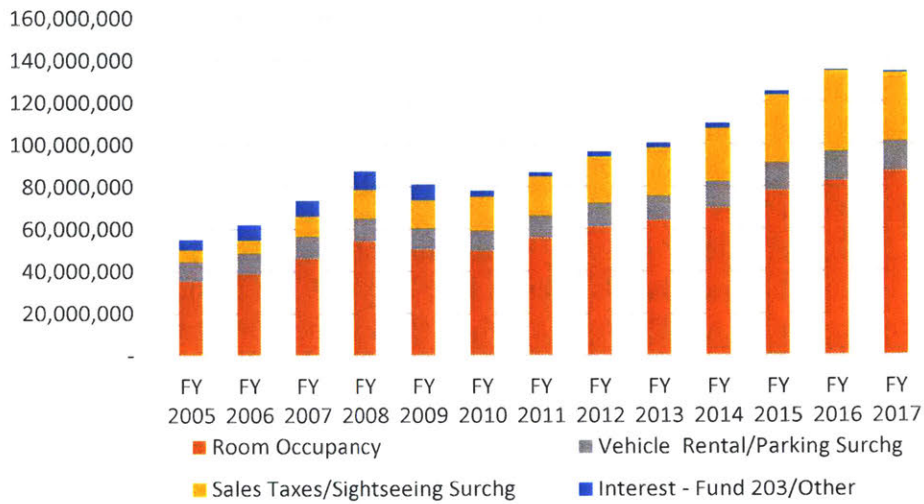
(Massachusetts General Legislature, 1997)

BCEC Financing District



..... Approximate boundary of Convention Center Financing District

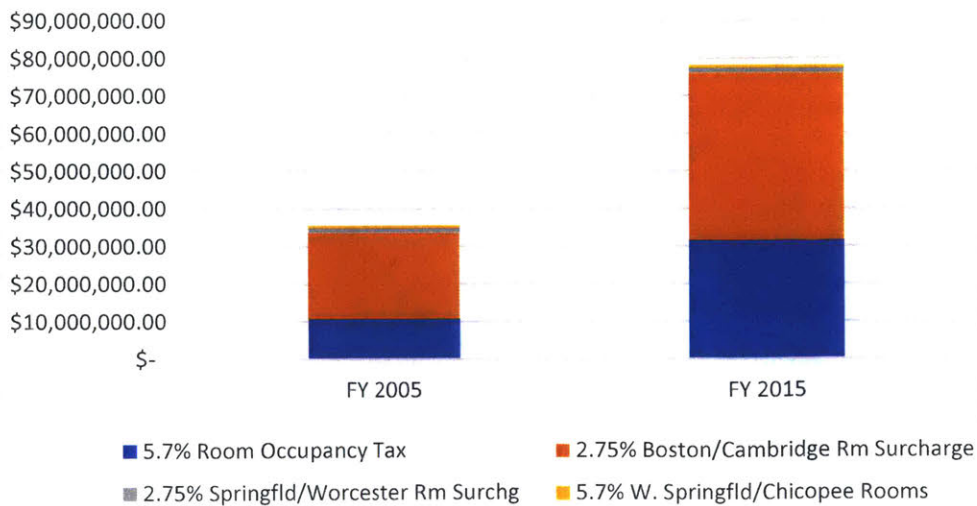
Convention Center Fund revenue, fiscal years 2005 through 2017



Source: Comptroller of the Commonwealth of Massachusetts

From fiscal year 2005 to fiscal year 2017, the CCF realized approximately total revenue of approximately \$1.2 billion. While revenue dipped in 2009 and 2010 it has generally been on an upward trend since. The annual revenue contributed to the fund has increase by more than 140% since fiscal year 2005. The largest contributor to the fund is the room occupancy tax, which has increased from approximately \$36 million in fiscal year 2005, to more than \$87 million in fiscal year 2017.

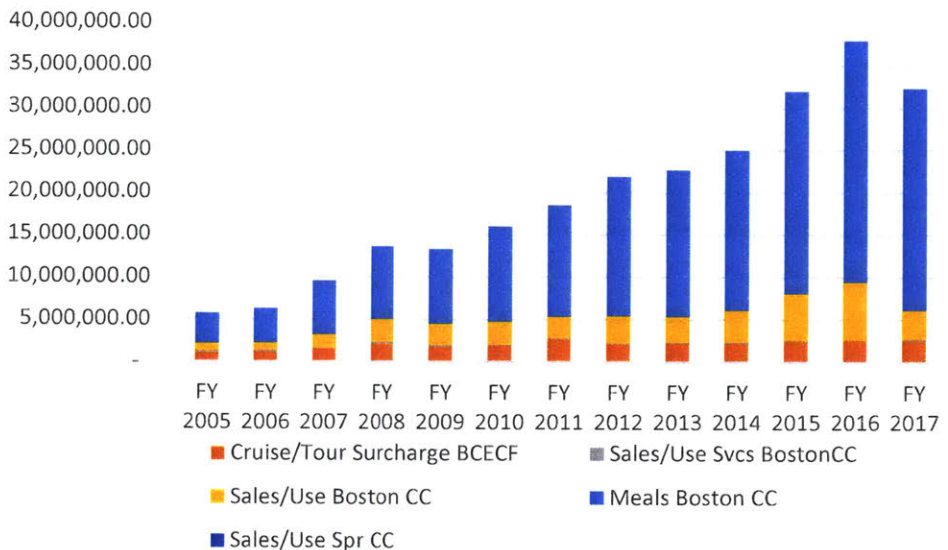
Room occupancy taxes, fiscal years 2005 and 2015



Source: Comptroller of the Commonwealth of Massachusetts

Almost all the growth in the room occupancy tax is from the 2.75% Boston/Cambridge fee and the 5.7% room occupancy tax on the BCEC financing district and new hotels. The revenue generated by 2.75% Boston/Cambridge fee increased from \$23 million in fiscal year 2005 to more than \$44 million in fiscal year 2015. Similarly, the 5.7% room occupancy tax revenue increased from \$10.8 million in fiscal 2005 to more than \$31 million in fiscal 2015. The large increase in the tax is due to a combination of an increase in the number of hotel rooms in the city of Boston and the BCEC financing district as well as an increase in the ADR during this period. In fact, more than 1,000 rooms have been constructed in the BCEC financing district over the last 12 years and more than 5,000 were built throughout the cities of Boston and Cambridge. According to data from Smith Travel Research (“STR”), the average daily rate (ADR) in Boston and Cambridge increased from \$170 in 2005 to \$256 in 2017.

Sales taxes and sightseeing surcharges, fiscal years 2005 through 2017



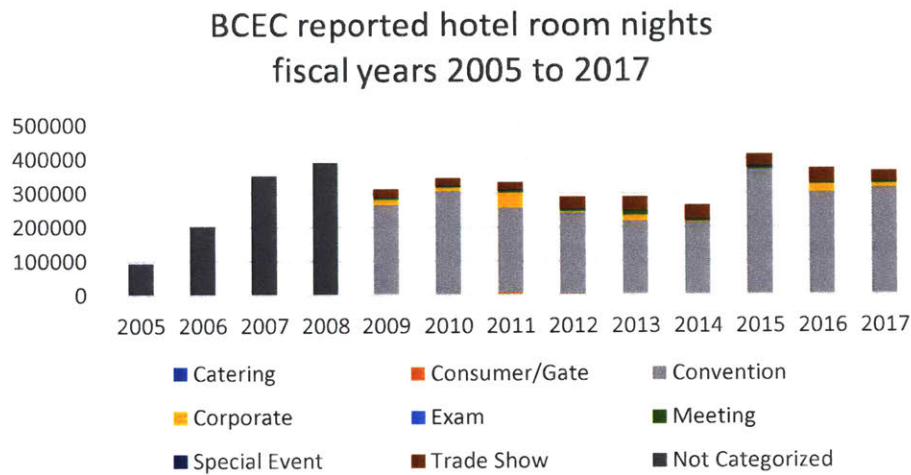
Source: Comptroller of the Commonwealth of Massachusetts

From 2005 to 2017, the meals tax was the fastest growing of the taxes established by Chapter 152. It increased from around \$3.5 million in FY 2005 to over \$26 million in 2017. There has been a significant increase in the number of dining establishments in the BCEC Financing District, which includes the entirety of the recently-developed Seaport neighborhood, Fort Point and South Station. While the convention center certainly made a positive contribution to the meals tax in this neighborhood, millions of square feet of office and multifamily has been built in this neighborhood over the last decade. The Seaport neighborhood has become one of the most expensive neighborhoods in the city of Boston and is a dining destination for tourists and locals alike.

Despite being created for the express purpose of paying off the bonds associated with the construction of the MCCA’s facilities and subsidizing its operations, legislators have dipped into the fund for other reasons. In September of 2016, the Massachusetts legislature closed its budget deficit when it approved a spending bill that included drawing \$60 million from the state’s Convention Center Fund to use for general spending purposes. (Norton, 2019) In 2017, the mayor of Boston has advocated using \$16.5 million from the CCF in order to pay for the city’s pre-kindergarten program (City of Boston, 2017).

Hotel Room Nights

As mentioned previously, hotel room nights are the most important measure of a convention center’s performance because they generally correlate to the actual net economic impact generated by the facility. Unlike attendance, hotel room nights are not affected by events that are primarily attended by local attendees. The following graph show’s the MCCA’s estimates of the room nights generated by the BCEC.



Source: MCCA Data, 2009 BCEC Strategic Development Plan

While fiscal year 2017 had the highest attendance of any year since the BCEC opened, fiscal year 2015 saw the highest number of room nights generated with a total of approximately 413,000 rooms demanded. The prior peak was 2008, when the facility generated approximately 390,000 room nights. Most of the room nights are generated by the convention category.

The BCEC generates significant hotel room nights year; however, the number of room nights is still far below the 645,000 nights projected by the original feasibility study that was used to justify its construction. When the BCEC was being constructed, it was estimated that at least 3,500 to 4,000 rooms within walking distance of the new facility would need to be constructed to be competitive. Today, the BCEC has 2,782 rooms within one half mile. There are an additional 1,749 rooms in the pipeline that would bring the total of 4,531 rooms within walking distance of the facility.

It is important to note that room nights generated by the BCEC are not necessarily a net gain in room nights to the city of Boston. On nights that typically have high room demand, room nights

generated by the BCEC and Hynes, which may be booked years in advance, might effectively displace room nights generated by other causes. In their 2010 impact study, HVS Convention Sports & Entertainment used a regression analysis to analyze this impact. The analysis was based on “1,095 observations – three years of daily data on whether a convention and tradeshow event occurred at either the Hynes or BCEC and the number of occupied room nights in the city of Boston” (HVS Convention, Sports and Entertainment, 2010).

For this report, that we have performed a similar analysis with data from July 2008 through December 2017 for a total of 3,471 observations. The dataset included daily data on whether an event occurred at either the Hynes or the BCEC and the occupied room nights in the cities of Boston and Cambridge. While the HVS analysis focuses only on the city of Boston’s hotel demand, the proximity of the Hynes to Cambridge makes the Cambridge hotel data relevant to the analysis. Cambridge should also be included because of its proximity to the Hynes facility and the fact that its hotel guests are required to pay the 2.75% convention center financing fee.

The regression model is as follows.

$$Y_i = \beta_1 B_i + \beta_2 H_i + \beta_3 M_1 + \beta_4 M_2 + \dots + \beta_{13} M_{11} + \beta_{14} P + \beta_{15} W + \beta_{16} L + \varepsilon_i$$

Where:

Y = Number of Occupied Rooms in Boston and Cambridge (dependent)

β = coefficients

B = Event Day at BCEC

H = Event Day at Hynes

M = Month of the year

P = Peak Weekday (Tuesday)

W = Mid Weekday (Wednesday & Thursday)

L = Low Weekday (Monday & Friday)

ε = Random error term

i = days or the number of observation

In the analysis, proxy variables were utilized for the independent variables. A “1” was used to represent an affirmative, and a “0” was used to represent a negative. Accordingly, the resulting coefficient equates to the total number of room nights added by an affirmative of that variable.

The resulting model proved to be statistically significant with a correlation coefficient of 0.71 and an adjusted r square value of 0.51, meaning that 51% of the variation in hotel room demand can be explained by the independent variables used in our analysis. Aside from the month of January and the Low Weekday (Monday & Friday) variables, all the variables had a statistically significant p-value of less than 0.001. The details of the regression are shown on the following page.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.7157
R Square	0.5122
Adjusted R Square	0.5099
Standard Error	2.843
Observations	3,471

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	16	29.316,984,141	1,832,311.509	227	0
Residual	3,454	27.925,039,033	8,084.840		
Total	3,470	57.242,023,175			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	11,418	177	64.38	0.000	11,071	11,766
BCEC Event	1,346	99	13.59	0.000	1,152	1,540
Hynes Event	1,348	100	13.45	0.000	1,152	1,545
January	-125	235	-0.53	0.594	-585	335
February	936	241	3.89	0.000	464	1,409
March	3,726	237	15.73	0.000	3,262	4,191
April	5,454	239	22.84	0.000	4,985	5,922
May	5,670	237	23.95	0.000	5,206	6,134
June	6,427	240	26.76	0.000	5,956	6,898
July	6,649	230	28.94	0.000	6,199	7,100
August	6,747	229	29.46	0.000	6,298	7,196
September	5,953	232	25.61	0.000	5,497	6,408
October	6,090	233	26.16	0.000	5,634	6,547
November	3,431	233	14.73	0.000	2,974	3,888
Peak Weekday (T)	718	181	3.98	0.000	364	1,073
Mid Weekday (WR)	526	148	3.56	0.000	236	816
Low Weekday (MF)	194	117	1.67	0.096	-34	423

Based on this model, the occurrence of an event at the BCEC generates demand for an additional 1,346 Boston-Cambridge rooms per night on average. The 95% confidence interval ranges from 1,152 rooms to 1,540 rooms per night. These numbers are fairly similar to the number of room nights projected by the HVS analysis, which as 1,362 rooms per event night with a 95% confidence interval of 1,076 nights to 1,647 nights.

Since the BCEC's impact on the immediate surrounding neighborhood is also relevant to the analysis, we have prepared an additional regression. This regression, which is on the following page, is identical to the previous regression with one key difference. Rather than examining hotel occupancy in all of Boston and Cambridge, the regression uses only the occupancy at hotels in the one-mile radius immediately surrounding the BCEC, which generally approximates the boundary of the BCEC financing district.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.6297
R Square	0.3966
Adjusted R Square	0.3938
Standard Error	620
Observations	3,471

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	16	873.144.015	54.571.501	142	0
Residual	3.454	1.328.676.017	384.677		
Total	3.470	2.201.820.032			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	1.363	39	35.22	0.000	1.287	1.438
BCEC Event	342	22	15.81	0.000	299	384
Hynes Event	178	22	8.13	0.000	135	221
January	137	51	2.67	0.008	36	237
February	155	53	2.95	0.003	52	258
March	670	52	12.97	0.000	569	771
April	957	52	18.37	0.000	855	1.059
May	996	52	19.28	0.000	895	1.097
June	1.107	52	21.13	0.000	1.004	1.210
July	1.159	50	23.12	0.000	1.061	1.257
August	1.134	50	22.71	0.000	1.037	1.232
September	1.044	51	20.59	0.000	944	1.143
October	1.084	51	21.35	0.000	984	1.184
November	546	51	10.74	0.000	446	646
Peak Weekday (T)	205	39	5.19	0.000	127	282
Mid Weekday (WR)	65	32	2.00	0.045	1	128
Low Weekday (MF)	-4	25	-0.14	0.889	-53	46

The resulting model also proved to be statistically significant with a correlation coefficient of 0.63 and an adjusted r square value of 0.40, meaning that 40% of the variation in hotel room demand can be explained by the independent variables used in our analysis. Several of the independent variables (January, February, Low Weekday (Monday & Friday), Mid Weekday (Wednesday & Thursday)) proved to be statistically insignificant. Based on this regression, an event at the BCEC generates an additional demand for 342 rooms per night on average in the 1-mile area surrounding the BCEC. The 95% confidence interval suggests that the BCEC events generate demand between 299 rooms and 384 rooms per night on average.

One would expect that correlation between events at the BCEC and Hynes and the number of room nights at hotels surrounding the BCEC would be far clearer than the impact on the overall Boston/Cambridge market, but that is not the case. Performing several variations of this regression with different independent variables (convention days, attendance, convention attendance) did not yield superior results. Considering most of these hotels are relatively new

and several have refused to block off rooms for the BCEC, it is possible that these hotels are more focused on tourists than hotels in other areas of the city. If that is the case, then some of the hotels that are paying the most towards the BCEC are the hotels that do not heavily rely on it for business.

Expansion Costs and Benefits

Expansion Plan Overview

In 2014, the Massachusetts state legislature authorized \$1 billion of funding to finance the construction of a 1.3-million-square-foot expansion to the BCEC that includes substantial additions to the exhibit and meeting space, and a second larger ballroom (Massachusetts Convention Center Authority, 2016). This plan was based on the 2009 Strategic Development Plan prepared by Sasaki, TVS and Convention Sports & Leisure (CSL) and the Economic and Fiscal Impacts Analysis of the MCCA Expansion Project done by HVS. While the recent RFP intends to reexamine the plan for the facility, no details have been released to date. This report relies on several projections made in the reports used by policy makers to analyze the expansion when it was approved.

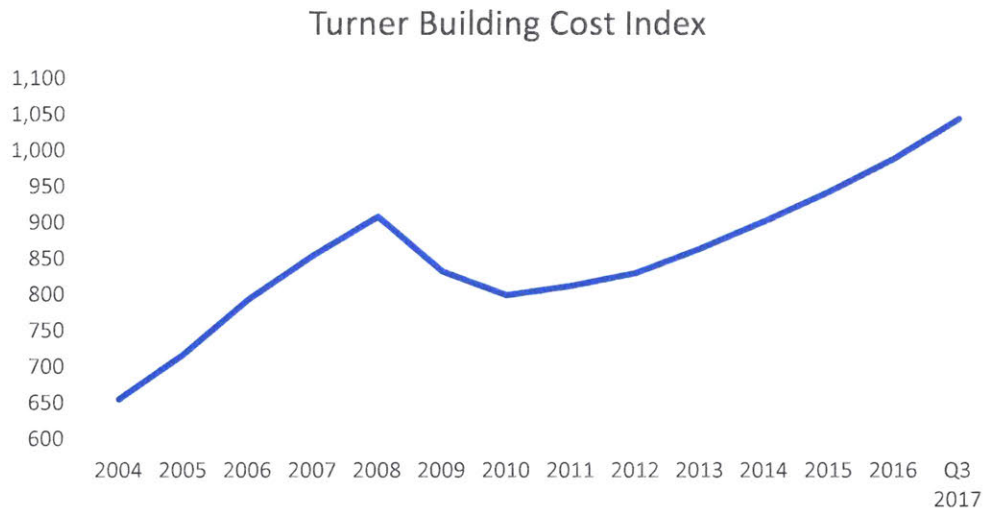


Currently, the convention center has a total of 516,000 square feet between its three main convention halls. The expansion plans call for an additional 335,000 of exhibit hall space, which would bring the total exhibit hall space to 851,000 square feet. This space would be constructed towards the rear of the existing center and would be flanked by new meeting rooms along D Street and a new auditorium. Between the hotel and the new ballroom along the northeastern side of the BCEC, a total of 70,000 square feet of ballroom space would be added. The plan also included two potential headquarters sites. The site to the left of the diagram that was identified as a potential headquarters hotel site is the same site that has been selected as the future home of the proposed 1,000-room hotel.

Direct Costs

Construction & Financing

As mentioned previously, the total cost of the expansion was estimated at approximately \$1 billion in 2014. With the flurry of construction projects in the city of Boston, the price of construction has been steadily increasing over the past few years.



According to the Turner Building Cost Index, an index put out by Turner Construction that is determined by labor rates and productivity, material prices and the competitive condition of the marketplace, construction costs in the US increased 15.7% from 2014 to Q3 2017.

Like its construction, the expansion will be financed with bonds. According to FMSbonds, Inc., a broker that focuses on the municipal bond market, 30-year municipal bond rates for AAA-rated bonds are 2.60% while rates for AA-rated bonds are 2.80% (as of January 15, 2018). Any financing used to construct the convention center would likely be borrowed at a rate that is within this range. Massachusetts has a AA rating; however, special obligation bonds can have a higher credit rating than the issuer since they are often tied to specific revenues.

There are also costs associated with issuing bonds such as underwriter's discounts, bond counsel fees, financial advisor fees, rating agency costs, bond insurance, etc. According to a study by the

Haas Institute at UC Berkley, the total cost of these fees averages 0.91% for issuances over \$10 million (Joffe, 2015).

The estimated total cost of the expansion plan is summarized as follows.

BCEC Expansion Cost Estimate	
2014 Cost	\$1,000,000,000
Inflation (15.7%)	<u>\$157,000,000</u>
Current Expansion Cost	\$1,157,000,000
Financing Costs (0.91%)	<u>\$10,528,700</u>
Total Current Expansion Cost	\$1,167,528,700
Amortization	30 Years
Interest Rate	2.80%
Annual Payment	\$57,567,727
Total Interest	\$559,503,098
Total Principal	<u>\$1,167,528,700</u>
Total Payments	\$1,727,031,798

Based on these calculations, the BCEC expansion that has been proposed will result an additional annual cost of approximately \$57.6 million per year. While this figure is not exact, it is reasonable based on the previously proposed expansion and current market trends.

Operations

In 2016, the BCEC had an operating loss of \$41.7 million excluding central administration costs and sales/marketing expenses which are shared by all of the MCCA's facilities. Historically, there has been a correlation between the revenue of the facility and the size of its operating loss. The most successful years in terms of revenue generated the some of the largest deficits. Unless prices are increased substantially, additional events at the BCEC would lead to higher deficits based on historical performance.

According to the HVS report, the newly-expanded BCEC has the potential to generate an additional 14 conventions, 1 tradeshow and 20 banquets per year. These additional events would increase overall attendance by approximately 152,000 attendees per year. That would represent a substantial increase from the 570,000 attendees that attended events at the BCEC in the 2016 fiscal year.

In fiscal year 2016, the BCEC had an operating deficit of approximately \$73 per attendee. Based on this figure, the additional 152,000 attendees would generate an additional annual loss of more than \$11 million per year. That doesn't include the additional cost associated with the marketing and sales of the expanded facility. It is possible that an expanded facility could change the operating efficiency of the facility; however, the BCEC has historically generated higher deficits with more business. Unless the demand for the BCEC increases so greatly that the facility can

raise its rents, any future increase in business is likely to lead to an increase in the operating deficit.

Indirect Costs

Lost Tax Revenue

The land that would be utilized to expand the convention center is some of the most valuable development land in the country. The Seaport neighborhood has undergone a huge transition over the past ten years as millions of square feet of development have been undertaken. In 2015 and 2016, entitled land in and around the Seaport Square development sold at prices ranging from \$28 million to \$51 million per acre. In December of 2016, GE paid around \$21 million per acre for the land to the east of the BCEC that will be used for its corporate headquarters. Land along D Street to the east of the convention center was acquired via eminent domain by the MCCA in 2014 for almost \$6 million per acre to construct two hotels and a parking facility.

While hotels developed by the MCCA or on land owned by the MCCA could also result in a loss of tax revenue, the two most recent examples (Aloft and Element) are in the city's 121B Program and make PILOT (Payment In Lieu Of Taxes) Payments. Those payments will continue through Fiscal Year 2020. After that, the hotels will be assessed and taxed as commercial property.

Unlike these two hotels, the planned expansion of the BCEC will likely not pay real estate taxes to the city. The two parcels owned by the MCCA located towards the rear of the BCEC include approximately 18 acres of land. Currently the land is zoned for industrial use; however, getting a special permit or changing the zoning of the site would not be unreasonable considering the makeup of the surrounding neighborhood and the fact that the MCCA is a component of the commonwealth. The site's location is suited to a variety of uses including multifamily, retail, residential, office and hotel. It is well-located within the city with excellent access to the MBTA's red and silver lines. Like Seaport Square, it is likely that any large-scale development of the site would include a mix of uses.

If the site were developed to a similar floor-area-ratio (FAR) as the West Square Apartments, a low-rise apartment complex located just south of the BCEC that has an FAR of 3.2, the site would be capable of supporting a total of almost 2.5 million square feet. If the site were developed at an FAR of 7.5 (comparable to Seaport Square PDA FAR of 7.55), the site would be able to support approximately 5.9 million square feet. With newer developments in the area immediately surrounding the BCEC generate approximately \$8.50 to \$13.00 per square foot according to 2018 assessment data from the city of Boston, this represents a substantial loss in potential tax revenue. The following table provides a general range of the lost potential annual tax revenue that results using the 18 acres of land for additional convention center space.

FAR	Potential Square Feet	Annual Potential Tax Revenue		
		\$8.50/SF	\$10.50/SF	\$12.50/SF
3.0	2,352,240	\$19,994,040	\$24,698,520	\$29,403,000
4.0	3,136,320	\$26,658,720	\$32,931,360	\$39,204,000
5.0	3,920,400	\$33,323,400	\$41,164,200	\$49,005,000
6.0	4,704,480	\$39,988,080	\$49,397,040	\$58,806,000
7.0	5,488,560	\$46,652,760	\$57,629,880	\$68,607,000

Based on these calculations, the construction of the expansion results in a loss between \$20 and \$71 million of potential property tax revenue depending on the FAR and tax/square foot that could be achieved by developing the site. This figure is highly-dependent on what could be approved on the site. It does not include any tax that would be generated by other uses at the site such as business taxes, meals taxes, payroll taxes, etc.

Lost Potential Economic Impact

Depending on the FAR of the development and the uses that would have occurred on the site, there is a wide range in the lost potential economic impact that results from using the land for a convention center. According to a 2013 report (Fuller, 2013) by released by the National Multi Housing Council and National Apartment Association, apartments in the Boston metro area generate a total annual economic impact of more than \$2.7 billion (\$7,221 per unit) and support 19,920 jobs (0.06 jobs per unit). Furthermore, construction generates economic impact \$227 thousand per unit and supports 1.6 jobs per unit. Based on these figures, the total initial and ongoing potential economic impact of the site based on multifamily use is calculated as follows.

FAR	Potential Square Feet	Units	Construction		Ongoing Operations	
			Econ. Impact	Jobs	Econ. Impact	Jobs
3.0	2,352,240	2,352	\$534,785,492	3,667	\$16,983,372	135
4.0	3,136,320	3,136	\$713,047,323	4,890	\$22,644,496	180
5.0	3,920,400	3,920	\$891,309,154	6,112	\$28,305,620	226
6.0	4,704,480	4,704	\$1,069,570,984	7,335	\$33,966,744	271
7.0	5,488,560	5,489	\$1,248,060,190	8,559	\$39,635,089	316

Depending on the FAR, complete multifamily development at the site would generate initial economic impact between \$500 million and \$1.2 billion and support 3,700 to 8,600 jobs. Ongoing operations would generate annual economic impact of \$17 million to \$40 million and support 150 to 300 jobs. Since other uses might generate more ongoing economic impact and jobs, these figures should be viewed as a base level of economic impact. In all likelihood, any new development would include a mix of uses and would likely generate a higher level of ongoing economic impact.

Direct Benefits

Increased Events

The MCCA was unable to provide the lost business surveys that are important to analyzing the current demand for the BCEC. Even with that data, it would be very difficult to project future demand for the expanded facility. As mentioned in the first half of this report, convention center demand is highly-correlated to the overall economy. A renovated and expanded convention center that is delivered at the wrong time in the cycle can fall short of what it might have accomplished had it been delivered at the right time. While some newly-expanded convention centers realize a pop in their attendance immediately after the expansion is completed, the attendance may return to pre-expansion levels in the years that follow. New renovations could be outshined or undercut by other facilities that provide a better overall package to event planners in terms of experience and price. It is also possible that there is so much demand for Boston that the two existing convention centers are in fact turning away significant business that would have held their events in Boston if it had the space and the expanded facility would increase the total attendance throughout the city.

Without the requisite tools to estimate the current demand for the facility, this report has relied on the HVS analysis that projected the expansion would lead to an additional 35 new events at the BCEC including 14 conventions, 1 tradeshow and 20 banquets per year. These additional events are assumed to increase overall attendance by approximately 152,000 attendees per year. Approximately 25% of those attendees would be daytrip visitors.

Direct Spending & Economic Impact

In the 2017 fiscal year, the MCCA conducted surveys of attendees of 21 events at the BCEC and 20 events at the Hynes. Excluding responses that didn't include ADR or room night data (likely local attendees), the per attendee spending for non-local attendees can be estimated. When combined with the projected out-of-town visitors (75% of 152,000) that are expected to be generated by the expansion, the total direct spending can be calculated as follows.

	Per Attendee	Annual Total
Average of Transp Spending	\$80	\$9,099,494
Average of F&B Spending	\$178	\$20,262,219
Average of Shopping Spending	\$108	\$12,336,004
Average of Other Spending	\$90	\$10,231,631
Average of Total Other Spending	\$162	\$18,447,651
Average of Total Non-Hotel Per Event Spending	\$398	\$45,400,678
Average of Total Per Event Spending	\$1,374	\$156,632,535

Based on the surveys, the average BCEC attendee that stays the night generates direct spending of \$1,374 over the course of 3.5 days, or \$393 per day. The total additional direct spending resulting from the expansion is estimated at approximately \$157 million.

To estimate the economic impact of the direct spending, HVS's IMPLAN analysis has been relied upon. The analysis generated total indirect and induced spending equal to 41% of the

direct spending. Based on this figure, total indirect and induced spending is estimated at \$64 million bringing the total economic impact of the spending to \$221 million per year.

Hotel demand

Based on the regression model earlier in this report, events at the BCEC generate 1,346 hotel rooms in Boston and Cambridge on average. Of those rooms, 342 are within the one-mile area surrounding the BCEC. Unlike the conventions and trade shows, banquet events typically don't generate significant hotel nights, so those events are excluded from the analysis. Assuming the 15 non-banquet events have an average event length of 3.5 days, the additional hotel demand is calculated as follows.

	Rooms Per Day		Days		Rooms Per Event	Total (15 Events)
BCEC One-Mile Area	346	x	3.5	=	1,211	18,165
Total Boston/Cambridge	1,346	x	3.5	=	4,711	70,665

Taxes, Fees and Surcharges

Assuming the bonds for the expansion are paid by the same taxes, fees and surcharges that funded the original construction of the convention center, the total additional revenue to the convention center fund can be estimated based on the direct spending estimates and the hotel rooms that were projected.

Room Occupancy Taxes

A 2.75% Convention Center Financing Fee is applied to all hotels in Boston and Cambridge. Based on the 2016 ADR for BCEC attendees of \$262 and a total of 70,665 additional hotel nights in Boston and Cambridge, this tax will generate additional revenue of approximately \$500,000 per year.

A 5.7% Room occupancy tax is applied to all hotels within the BCEC Finance District and hotels opened after July 1997. Based on the 2016 ADR and 18,165 additional hotel nights within the 1-mile radius, the BCEC district will generate approximately \$270,000 per year. The total number of hotels in Boston in June of 1997 was about 58% of the total number of hotel rooms today. If 42% of Boston/Cambridge hotel nights that are generated outside of the BCEC financing district (52,500 room nights) pay the 5.7% tax, the total additional tax from these rooms is approximately \$330,000 per year.

Other Taxes, Fees and Surcharges

A 5.00% retail sales tax is applied to any establishment opened after 1997 within the BCEC Finance District and any hotels opened after 1997 in Boston and Cambridge. Another 5% tax is applied to several Boston sightseeing activities. Assuming these taxes apply to 75% of non-hotel spending of the additional non-day-trip attendees, the total additional revenue from this tax would be approximately \$1.1 million.

There is \$2 per day parking surcharge at the convention center parking facility and a \$9 per contract vehicular rental surcharge in Boston. Due to the location of the BCEC, its accessibility to the airport and South Station, and the cost of parking in Boston, it is unlikely that many attendees will rent vehicles. If 20% of the out-of-town attendees rent vehicles and park them at the BCEC for 3.5 days on average and all of the day trippers park at the BCEC, the total revenue provided by this source is approximately \$625,000.

Total Annual Convention Center Fund Revenue

Based on the calculations the total projected additional revenue to the Convention Center Fund is summarized below.

Tax/Fee	Tax/Fee	Projected Annual Tax Revenue
CCF Fee	2.75%	\$500,000
Room Occ. Tax	5.70%	\$600,000
Retail Sales Tax & Sightseeing Surcharge	5.00%	\$1,100,000
Parking Surcharge	\$2 per day	\$425,000
Vehicle Rental	\$9 per contract	<u>\$200,000</u>
		<u>\$2,825,000</u>

While this number doesn't capture 100% of the taxes that will be generated by the convention center, it provides a good estimate of the direct taxes that will be generated. Additional taxes would result from the indirect and induced spending.

Intangible

As mentioned previously, there are intangible benefits to expansion of the convention center. Some proponents tout the importance of Boston being seen as a world-class city. The question is, does a bigger convention center have much of an impact on people's perception of the city? Would it have more of an impact than the existing BCEC if the surrounding neighborhood were completely redeveloped with a mix of uses? Drawing any sort of conclusion about the net intangible benefits of an expanded convention center is very difficult if not impossible.

Conclusions

Summary

The costs and benefits discussed in the analysis are summarized as follows.

- Costs
 - Approximately \$1.7 billion of construction costs which would translate to around \$57.6 million per year if financed with municipal bonds
 - Additional operating loss of approximately \$11 million per year
 - Lost economic impact from potential alternative use of site of at least \$500 million from construction and \$17 million per year from operations (assumes 100% multifamily development)
 - Lost potential real estate tax revenue of \$20 to \$60 million per year
 - Loss of land that could be put towards an alternate use that might better serve the citizens of Massachusetts
- Benefits
 - Additional BCEC attendance of 152,000 people per year including approximately 25% local attendees
 - Approximately \$221 million of annual economic impact resulting from the increased direct spending
 - Additional hotel demand for over 70,000 rooms nights per year
 - Additional tax revenue of around \$2.8 million will flow into the convention center fund

Overall, the actual net benefit of the expanded convention center is unclear. Assuming attendance increases (not guaranteed), the construction of the facility could generate a net positive economic impact depending on what would have been feasible on the site otherwise. The increased direct spending could be significant, but the tax revenue generated by that spending would be nowhere near enough to cover the cost of the building. The net result is a large decrease in the amount of tax revenue in the convention center fund that might be used for alternate uses (i.e. schools) as it has been in the past. The total increased hotel room demand resulting from the increased attendance would be sufficient to fill 20% of the additional supply created by the proposed 1,000-room hotel. Without clear evidence of a major economic benefit, the pursuit of the expanded facility should be closely examined and weighed against other potential uses of capital.

Appendix

Exhibit I

CEIR Index Data

Year	Net Square Feet (Millions)	Exhibitors (Thousands)	Attendees (Thousands)	Real Revenues (Millions of 2009 Dollars)
2001	295	1,423	30,912	\$10,294
2002	285	1,373	29,830	\$9,687
2003	284	1,386	30,215	\$9,397
2004	292	1,422	31,887	\$9,714
2005	297	1,450	31,340	\$10,256
2006	301	1,420	31,342	\$10,174
2007	309	1,442	32,477	\$10,705
2008	302	1,402	31,415	\$10,306
2009	271	1,250	29,210	\$9,099
2010	266	1,241	30,219	\$8,522
2011	272	1,271	30,891	\$8,736
2012	275	1,277	31,540	\$8,920
2013	279	1,288	31,902	\$9,072
2014	285	1,307	32,391	\$9,283
2015	294	1,337	33,383	\$9,860
2016	298	1,329	33,183	\$9,702

Source: CEIR Index Reports

Exhibit II - Expansion Summary

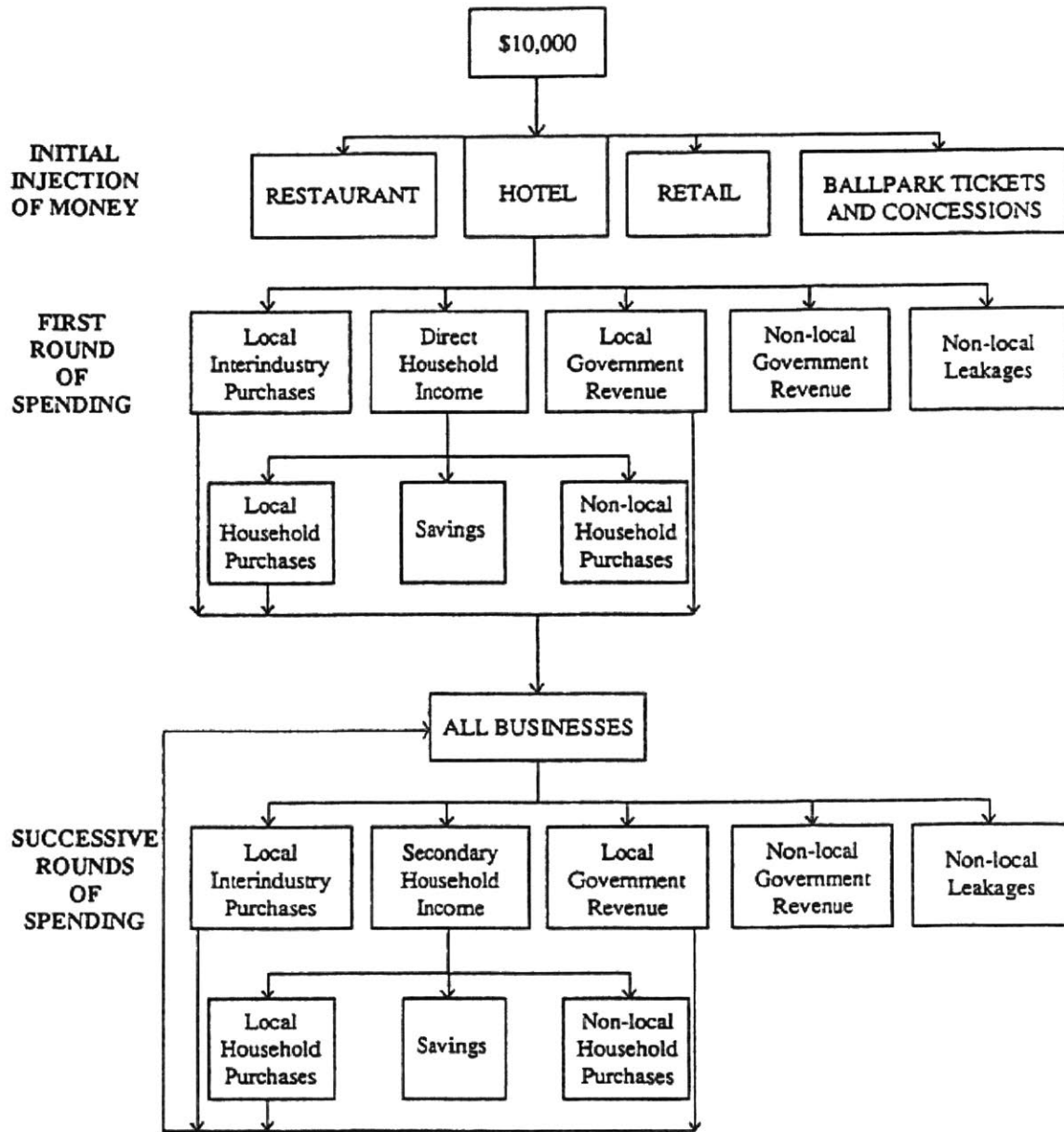
These projects are detailed as follows.

- Anaheim, CA – In September 2017, the Anaheim Convention Center opened its 7th expansion which added approximately 200,000 square feet of flexible exhibition space along with 1,400-space parking garage. The \$190 million expansion was undertaken in order to retain some of the most-popular and well-attended conventions.
- Atlanta, GA – The Georgia World Congress Center Authority's 2020 Vision strategic plan includes expansion and renovation of the convention center, the opening of the new Mercedes-Benz Stadium, the development of an onsite convention hotel (800 to 1,100 rooms) and various upgrades to its facilities. The expansion of the Georgia World Congress Center is expected to include an additional 115,000 square feet to connect two of its existing exhibition halls and create a contiguous one-million-square-foot exhibition space. The Authority has been given \$400 million of additional bonding capacity to pursue its strategic plan.
- Boston, MA – After being put on hold by the governor in 2014, the Massachusetts Convention Center Authority recently issued a request-for-proposal for a new master plan that would include a major expansion of the existing facility. The prior plan included 1.3 million square feet at a total cost of \$1 billion. Additional details of this plan are summarized later in this report.
- Dallas, TX – The Dallas Convention and Visitor's Bureau has plans to expand the convention center by 120,000 to 150,000 square feet and make various renovations to the center at a cost of \$200 million to \$250 million.
- Denver, CO – The city of Denver is currently in the planning stages of an \$233 million expansion to its convention center that would include an 80,000-square-foot ballroom, a 50,000-square-foot outdoor terrace, and various other upgrades/renovations throughout the center.
- Las Vegas, NV – The Las Vegas Convention and Visitor's Authority recently approved a \$1.4 billion expansion of the Las Vegas Convention Center that will be completed in 2023. The project will include a 600,000-square-foot exhibition hall, renovation of the existing exhibition halls and a 200,000-square-foot connector.
- Louisville, KY – The renovated and expanded Kentucky International Convention Center opens August 1, 2018. The \$207-million expansion/renovation will give the facility a total of 200,000 square feet of exhibit space, a 40,000-square-foot ballroom, 52 meeting rooms, and a 175-seat theater.

Exhibit II - Expansion Summary (Continued)

- Los Angeles, CA – After failing to attract an NFL team for the proposed stadium that would have been built next to the Los Angeles Convention Center (LACC), city officials have shifted their focus to expanding the convention center. In June 2014, the City Council approved a design competition to develop a new master plan for the LACC. The resulting \$500-million plan includes expanding the West Exhibit Hall to 355,000 square feet; the creation of a new 75,000-square-foot exterior ballroom; the addition of 78,000 of meeting room space; a new 97,000-square-foot ballroom above the exterior ballroom space; and a 1,000-room headquarters hotel.
- Miami, FL – The Miami Beach Convention Center is currently undergoing a \$620 million renovation and expansion that is expected to be completed in 2018. When completed the facility will have 500,000 square feet of exhibit space, a 60,000-square-foot ballroom, a 20,000-square-foot ballroom, and additional meeting rooms.
- New York, NY – The Jacob K Javits Center is currently being expanded. The \$1.1 billion expansion includes a truck marshalling facility that can hold 229 trucks, 90,000 square feet of permanent exhibit space, 27 loading docks, a green roof terrace and pavilion that can accommodate 1,500 people, 45,000 square feet of meeting room space, a 55,000-square-foot ballroom, and additional food/administrative space.
- Orlando, FL – The Orange County Convention Center is currently in the planning process for \$500-million-dollar, 800,000-square-foot expansion that would include a 200,000-square-foot multi-purpose venue, a 60,000-square-foot ballroom, and a grand concourse.
- San Diego, CA – The mayor and city council are pursuing a ballot measure that would raise the transit occupancy tax on hotels. Proceeds would be used to finance a proposed \$685-million convention center expansion, repair San Diego Streets and find solutions for homelessness. The expansion will include 400,000 square feet of additional exhibit, ballroom, and meeting space.
- San Francisco, CA – A \$500 million expansion/renovation of Moscone Center is currently underway. The expansion/renovation includes better connections between Moscone South and North, an additional 500,000 square feet of exhibition space, two pedestrian bridges and improved outdoor space.
- Seattle, WA – The Washington State Convention Center plans to start construction on its \$1.6 billion expansion in 2018. The addition will include 255,000 square feet of exhibition space, 125,000 square feet of meeting rooms, 60,000 square feet of ballroom space, street-level retail and pre-function space.

Exhibit III- Direct, Indirect and Induced Spending Resulting from A Sports Facility



(Crompton, 1995)

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