

Internal Analysis of MBI

Executive Summary

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Objectives

The MQP team's purpose was to execute an internal analysis of MBI. During this process the team examined the current organizational strategic plan, analyzed MBI financial documents, met with MBI staff including CEO Kevin O'Sullivan, and interviewed both MBI tenants and board members. In addition to these primary data sources, the team utilized a number of secondary data sources to inform its research.

Our goal was to learn about the life science incubation industry as well as MBI's scope of services, to conduct financial analyses, and to produce recommendations for the organization aiming to ensure future financial viability. Information that has been deemed useful to MBI, by the team, is included in this document. Tangible documents deemed useful consist of a number of tables, charts and graphs. Each contains financial information formatted to allow for a different type of analysis. Additionally, the team has made a number of recommendations for MBI. The recommendations are based upon the information obtained and analyzed throughout the team's internal analysis.

Methodology

The internal analysis next involved examining a number of primary sources. The primary sources included MBI's strategic plan as well as financial documents the team was able to acquire. The documents were used to make calculations and were reformatted to accommodate a number of financial analyses. The analyses aided the team in evaluating MBI's recent performance and showed how the organization has progressed.

Beyond these primary resources, the team learned about MBI's general operations and scope of services through interviews and meetings. This knowledge was obtained through regularly scheduled meetings with MBI CEO Kevin O'Sullivan and through the interviews conducted by the team. The team wanted to learn about MBI from a number of perspectives and selected interview parties accordingly. Acquiring a solid understanding of how MBI does business acted as a necessary base of knowledge in conducting the internal analysis.

Results

The MBI strategic plan was last updated January 2nd of 2007. The team reviewed the mission statement and core values, MBI's historical perspective, the strategy for accomplishing the mission, and the measures of success tracked by MBI. Progress in areas tracked was to be recorded and analyzed. The effectiveness of tasks associated with each metric was to be evaluated based on the amount of improvement earned for the given metric however because the figures were not formally documented this was not accomplished.

The financial analyses yielded a number of Excel sheets which were created using data from overall MBI budgets from 2006 – 2008, overall budgets expressed as percent of total revenue, individual location budgeted square foot costs for available years starting at 2005, and a Gateway Park budget to actual comparison.

Both the interviews and meetings resulted in a better understanding of the services offered and operations conducted at MBI. Some of the data from the interviews recorded by the team includes that the "MBI average graduation rate was 27 months in the year 2007" (Cocaine, 2008) and that "MBI operates with 3 full time employees and 2 part time employees" (Duffy, 2008). The team also learned about the inconsistency of MBI's state grant revenue. Kevin O'Sullivan noted that, "Some years we could get 500,000 dollars in grant and then the following year that number could be cut in half." (2008). Additionally, the benefits of partnering with universities such as WPI was emphasized during an interview with MBI Board Member and WPI President Berkey, when he stated, "I believe if MBI makes an effort to link with universities it would greatly help them expand and be able to thrive in markets outside of Central Mass" (Berkey, 2008).

Table 1 contains overall MBI budgets from 2006-2008. This allows for easy and convenient analysis of budget trends from one year to the next. Revenues have been fairly stable since 2006 however; there has been a significant decrease in budgeted equity royalties from 2007 to 2008. Many of MBI's expenses over the past three years have fluctuated. A number of expenses have either increased or decreased significantly. Total expenses have increased by nearly \$70,000 (5.6%) from 2007 to 2008, largely as a result of MBI's recent expansion into Gateway Park. Other reasons for fluctuations include a change in categorization in budgets. Expenses that were previously included with utilities have been shifted over to the operating expenses category. The 2006 budget included only telephone usage and interest costs under operating expenses while in 2007 and 2008 the operating expenses account for a great deal more than this.

Table 1: MBI 2006-2008 Budgets

MBI Budgets		<u>2008</u>	<u>2007</u>	<u>2006</u>
Revenue				
Rental Income		\$723,995	\$654,227	\$716,361
State Grant Revenue		\$525,000	\$675,000	\$425,000
Interest Income		\$3,000	\$3,000	
Equity Royalties		\$102,000	\$191,917	
		<u>\$1,353,995</u>	<u>\$1,524,144</u>	<u>\$1,141,361</u>
Expenses				
Wages, Taxes & Benefits		\$303,845	\$284,042	\$364,720
Insurance		\$42,802	\$33,711	\$36,000
Rent(s)		\$366,889	\$265,166	\$249,127
Operating Expenses		\$258,488	\$270,715	\$89,964
Utilities		\$51,521	\$170,628	\$173,400
Maintenance/Repairs		\$133,337	\$50,319	\$163,524
Professional Services		\$25,860	\$62,965	\$15,000
Office Operations		\$24,120	\$40,460	\$81,000
Health & Safety		\$40,800	\$1,200	\$0
Marketing/Fundraising		\$48,000	\$48,000	\$48,000
		<u>\$1,295,662</u>	<u>\$1,227,206</u>	<u>\$1,220,735</u>
Operational Gain		<u>\$58,333</u>	<u>\$296,938</u>	<u>-\$79,374</u>

*All budgets break down into two areas admin and operational costs and revenues.

*Admin Costs = Wages, Insurance, Professional Services, Office Operations, Health & Safety, Marketing/Fundraising

*Admin Revenues = State Grant, Interest Income, Equity Royalties

*Gateway was only open for 8 months in 2007.

*Winthrop St. was only open for four months in 2007 and then closed in April.

*2006 Budget was done differently than all others. Operating expenses just include telephone usage and interest

From Chart 1 we are able to see that the highest budgeted expenses for MBI in 2008 are wages, rent and operating expenses. They add up to almost 75% of the total costs of MBI. The next highest cost is the maintenance/repairs cost at 10%.

Pie Chart 1: MBI 2008 Budgeted Expense Breakdown

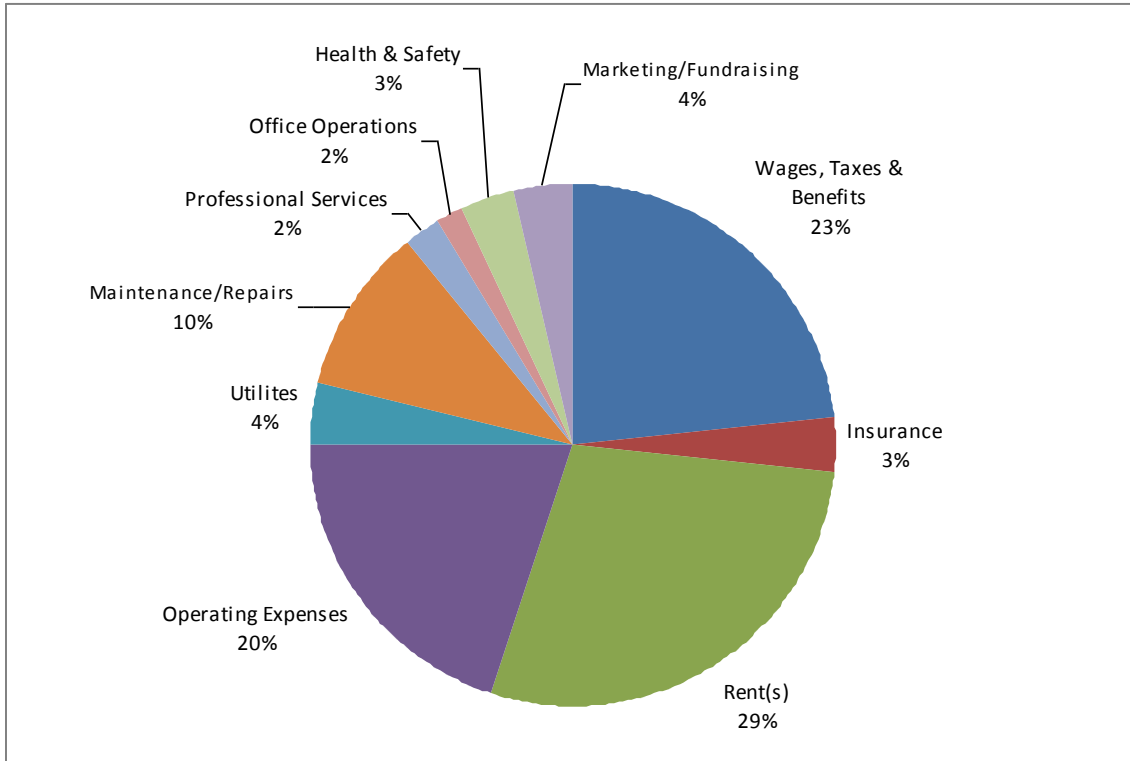


Table 2 expresses overall budgets from recent years as a percent of total revenue allows one to gain a better understanding of MBI's major sources of revenues and expenses and how they have changed each year. Rental income has consistently been MBI's greatest generator of revenue with state grant income close behind. Equity royalties also provide a relatively significant level of revenue. Because the total budgeted expenses for 2006 exceed 100% of revenue, MBI expected that its expenses would outweigh its revenues for the fiscal year. In 2007, there is approximately a 20% difference between budgeted revenues and expenses in MBI's favor. However, for 2008 the number has dropped to just about 5% due to MBI's acquisition of the Gateway facilities.

Table 2: MBI 2006-2008 Percent of Total Budgeted Revenue

	<u>2008</u>	<u>2007</u>	<u>2006</u>
Revenue			
Rental Income	53.47%	42.92%	62.76%
State Grant Revenue	38.77%	44.29%	37.24%
Interest Income	0.22%	0.20%	
Equity Royalties	7.53%	12.59%	
	100.00%	100.00%	100.00%
Expenses			
Wages, Taxes & Benefits	22.44%	18.64%	31.95%
Insurance	3.16%	2.21%	3.15%
Rent(s)	27.10%	17.43%	21.83%
Operating Expenses	19.09%	17.76%	7.88%
Utilities	3.81%	11.20%	15.19%
Maintenance/Repairs	9.85%	3.30%	14.33%
Professional Services	1.91%	4.13%	1.31%
Office Operations	1.78%	2.65%	7.10%
Health & Safety	3.01%	0.08%	0.00%
Marketing/Fundraising	3.55%	3.15%	4.21%
	95.69%	80.55%	106.95%

*Figures based on budgets

The individual location budgeted square foot costs in table 3 accommodate for a trend analysis of individual locations and allow for a relevant comparison among facilities. In order to convert the facility budgets to square feet the team divided each figure for a given facility by that facility's total number of square feet. Unfortunately there were only two facilities containing multiple years' worth of data, Winthrop St. and Barber Ave.

At Winthrop St. many of the variations are attributed to the facilities operational termination during the 2007 fiscal year. While some clients companies remained with MBI and moved into the company's new facility at Gateway Park, others were moved into independence or bestowed upon other incubator organizations outside of MBI. Expenses are lower for 2007 because of declining occupancy rates. This also explains the low rental income figure for Winthrop St. during 2007.

As can be seen from table 3, rent costs have increased from 2006 to 2007 from \$24.94/sq ft to 28.17/square foot. Additionally, professional fees and health and safety expenses jumped from \$0.00/sq ft to \$0.39/square foot and \$0.06 to \$0.15 respectively. Maintenance & repairs, and office expenses were reduced from \$4.78 to \$3.88, and \$0.95 and \$0.22.

A comparison among facilities during 2007 reveals Biotech Park had the highest rental revenue per square foot; however budgeted expenses at Biotech Park were higher than all other facilities as well. Gateways rental income was the lowest of the facilities still in operation due to low occupancy rates.

Table 3: MBI Sq Ft Budgeted Figures by Facility

Sq. Ft.	Winthrop Street		
	<u>2007*</u>	<u>2006</u>	<u>2005</u>
22000			
Income	Sq Ft	Sq Ft	Sq Ft
Rental	\$2.03	\$23.07	\$28.49
State Grant			
Interest			
Other			
Expenses			
Personnel		\$8.59	
Insurance	\$0.74	\$0.75	\$1.28
Rent	\$1.92	\$4.31	\$4.59
Operating	\$1.50	\$2.73	\$4.05
Utilities	\$1.74	\$4.61	\$7.69
Maintenance & Repairs	\$1.54	\$1.39	\$3.98
Professional Fees	\$3.71	\$3.63	\$2.19
Office	\$1.27	\$0.76	
Health & Safety	\$1.54	\$0.21	\$0.83
Marketing, Travel	\$0.39	\$0.39	\$1.76

* Moved out of Winthrop St Location, only four months of data, 2006 expenses based off budgeted values
 Note: Winthrop Street was designated Headquarters and therefore absorbs all personnel related expenses.

		Barber Ave		
Sq Ft.	8000	<u>2007</u>	<u>2006</u>	<u>2005</u>
Income		Sq Ft Cost	Sq Ft Cost	Sq Ft Cost
Rental		\$28.17	\$24.94	\$21.80
State Grant				
Interest				
Other				
Expenses				
Personnel			\$1.08	\$0.82
Insurance		\$1.00	\$1.06	\$0.94
Rent		\$10.68	\$10.68	\$9.93
Operating				
Utilities		\$4.22	\$4.22	\$3.72
Maintenance & Repairs		\$3.88	\$4.78	\$5.07
Professional Fees		\$0.39		
Office		\$0.22	\$0.95	\$0.11
Health & Safety		\$0.15	\$0.06	\$0.17
Marketing, Travel		\$0.00	\$0.04	

Sq. Ft. Gateway Park

7500

2007*

Income

Sq Ft Cost

Rental	\$15.75
State Grant	
Interest	
Other	

Expenses

Personnel	
Insurance	\$0.71
Rent	\$9.47
Operating	\$11.47
Utilities	
Maintenance & Repairs	\$2.28
Professional Fees	\$0.23
Office	\$0.35
Health & Safety	\$0.54
Marketing, Travel	

*Gateway only in operation for 8 months

Sq. Ft. Biotech Park

9280

2007

Income

Sq Ft Cost

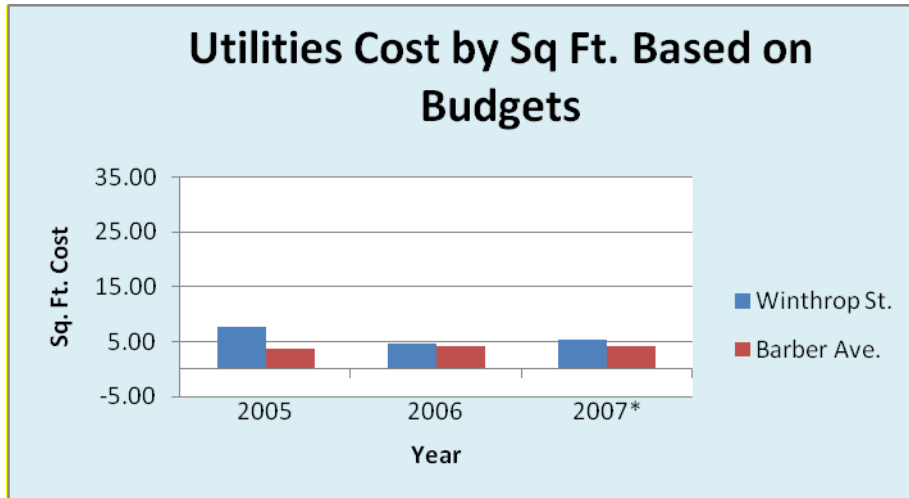
Rental	\$32.93
State Grant	
Interest	
Other	

Expenses

Personnel	
Insurance	\$0.54
Rent	\$15.01
Operating	\$10.85
Utilities	
Maintenance & Repairs	\$1.06
Professional Fees	\$0.28
Office	\$0.43
Health & Safety	
Marketing, Travel	

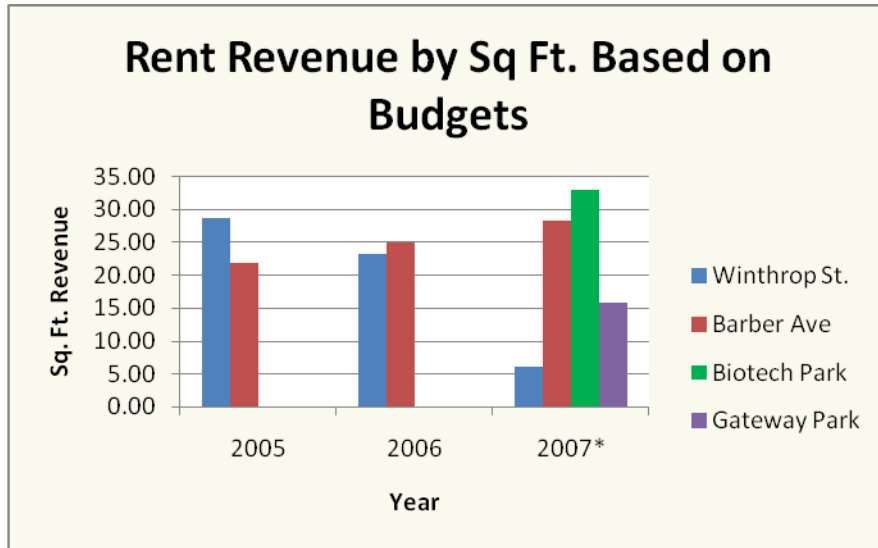
Graph 1 displays budgeted utility costs by square foot for Winthrop St. and Barber Ave from 2005 to 2007. This metric was not available for other facilities. As can be seen from the graph utility costs for Winthrop St. are generally higher especially in 2005.

Graph 1: Utilities Cost by Sq Ft



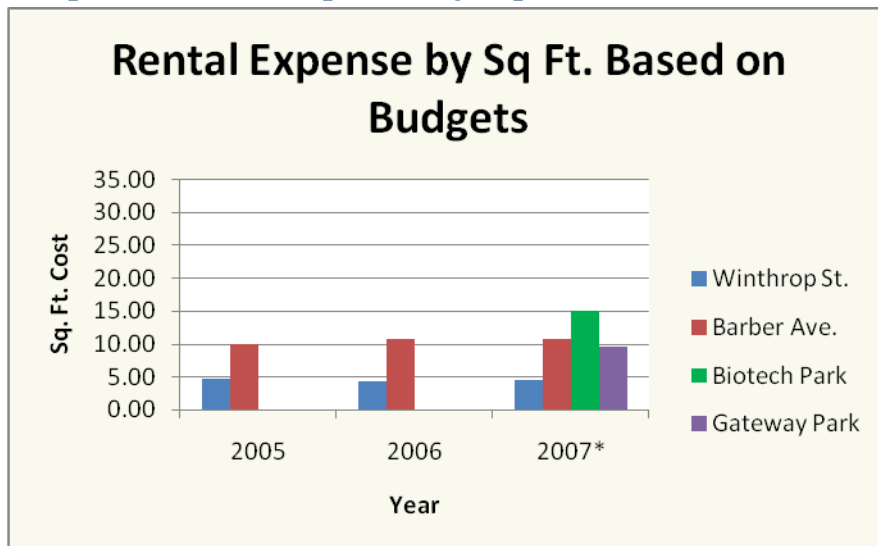
Graph 2 depicts budgeted rental revenue by square foot. In 2007 this figure varied quite a bit from facility to facility, the highest revenue being Biotech Park at nearly \$35 per square foot and the lowest, besides Winthrop where tenants were vacating, was Gateway Park at just over \$15 per square foot.

Graph 2: Rent Revenue by Sq Ft.



Graph 3 illustrates rental expense by square foot based on budgets. In 2007 Biotech Park had the highest rental expense at \$15 per square foot while Barber Ave and Gateway were approximately \$10 per square foot. Winthrop St.’s rental expense was budgeted below \$5 per square foot.

Graph 3: Rental Expense by Sq Ft



In Table 4, you can see the Sq Ft costs of many of MBI expenses. Wages, rent, and operating expenses are the biggest Sq Ft costs that MBI must face. Utilities dropped sharply in 2008. Barber Ave was the only facility accounted for in the utilities expense because the other buildings had not yet received their costs at the time of this report. Operating expenses start off very low in 2006 because a new accountant came up with a different way to calculate operating expenses. In 2006 operating expenses only took telephone charges and interest charges into consideration. In 2008 maintenance cost rose by \$3 per Sq Ft because of machines at Gateway Park being broken by inexperienced lab workers.

Table 4: MBI Sq Ft Expenses

<u>MBI Metric by Square Foot Cost</u>	<u>MBI AVG (06-08) Budgets</u>	<u>MBI Budget 2008</u>	<u>MBI Budget 2007</u>	<u>MBI Budget 2006</u>
<u>Metric</u>				
Wages, Taxes, Benefits	\$11.95	\$12.25	\$11.45	\$12.16
Insurance	\$1.43	\$1.73	\$1.36	\$1.20
Rent	\$11.26	\$14.79	\$10.69	\$8.30
Operating Expenses**	\$10.67	\$10.42	\$10.91	\$3.00
Utilities*	\$4.91	\$2.08	\$6.88	\$5.78
Maintenance and Equipment	\$4.29	\$5.38	\$2.03	\$5.45
Health and Safety	\$0.56	\$1.64	\$0.05	\$0.00

*2008 Utilities costs only include Barber Ave

** Operating Expenses calculated differently in 2006

Table 5 yields a number of benchmarking figures for MBI. When comparing MBI's average budgeted figures from 2006-2008 to that of the NBIA technology incubator averages from 2006 we see that MBI has 27.56% less space, 33.98% more revenue, 42.78% more revenue, comparable occupancy rates, 24% less employees, 29.63% less payroll expenses, 10.17% less rent revenue, 28.57% more client companies, 19.59% employed full time jobs, and a 27% lower operational gain. Considering MBI's smaller size the organization bodes well when compared with these industry standards. These comparisons may be skewed due to the fact that they were made against a technology incubator and not a life science incubator. There is a huge different between a information technology incubator and a life science incubator for example.

Table 5: MBI Benchmarks

<u>NBIA Benchmarks</u>	<u>MBI AVG (2006-2008)</u>	<u>NBIA 2006*</u>	<u>% Var from NBIA 2006</u>
<u>Metric</u>	<u>Budgets</u>		
1. Gross Square Footage	26,535	36,631	-27.56%
2. Revenues**	\$1,339,834	\$1,000,000	33.98%
3. Expenses	\$1,247,869	\$873,962	42.78%
4. Occupancy	75%	76%	-1.32%
5. Full-Time Equivalent	3.8	5	-24.00%
6. Payroll Expenses	25%	36%	-29.63%
7. Rent Revenue	53%	59%	-10.17%
8. Current Client Companies	18	14	28.57%
9. Months to Company Graduation	27	34	-20.59%
10. FTE Employees	78	97	-19.59%
11. Operational Gain	\$91,966	\$126,038	-27.03%

*Based on technology incubator.

**Revenues include state grant.

The last Excel sheet, table 6, contains a comparison of website rankings between MBI, Tufts, Cummings Property, and Science Park in Cambridge. In order to compare the MBI website to its competitors we used four major metrics; visuals, user-friendliness, content and structure. For each website we judged each metric on a scale of 0 to 10 in order to measure the overall quality (Norfolk, 2007). Based on table 6, MBI has a user friendly, presentable homepage. It looks professional and is very likely to grab the attention of a possible customer. It scored at least in 8 in all of our different metrics that the team has made in rating websites. The structure of the website is kept simple and plain. The website is fast and error free. The images in the MBI website are mostly low-resolution this eliminates the need for interlaced images. The homepage of the MBI website fits perfectly to a regular screen, eliminating the need for scrolling. Almost all of the links in the website are of the customers of MBI, this is very useful for potential customers who are interested in working with MBI as they would like to acquire information about the existing customers of MBI before starting to work with them. The evaluation was performed with guidance from internet website designers and a number of scholarly journals on rating websites.

Table 6: Website Comparison

Company	Address	Visuals	UF	Content	Structure	Total
MBI	www.massbiomed.com	8.5	8	8	10	34.5
Tufts	www.tufts.edu/vet/about/sciencepark.html	6.5	7	4	6	23.5
Cummings Prop.	www.cummings.com	5.5	6	9	8	28.5
Science Park	www.cambridge-science-park.com	8	8.5	9.5	10	36

Recommendations

Recommendations include offering formal training for some of its more expensive lab equipment, comparisons of their budgets to actual data, collaborating with other life science incubators to create more meaningful benchmarks, tracking each of the metrics listed in the organizations strategic plan, and expanding upon MBI's current relationship with WPI.

Our first recommendation for MBI is to provide formal training on lab equipment for tenants. The team feels that this may be able to significantly lower MBI's maintenance costs. Currently, if a machine breaks, MBI is responsible for fixing it. This can get costly when tenants don't know how to properly use a machine. Lack of formal training has led to machine breakdowns in the past and some of MBI's equipment costs as much as \$30,000. If MBI began providing machine operation training it will lower the chance of a breakdown due to improper use. This may go a long way in lowering maintenance costs for MBI's facilities and in improving tenant satisfaction. Tenants should experience fewer breakdowns as well as a decrease in repair time for the machines they depend on.

Another recommendation for MBI is to perform annual comparisons of budgeted numbers vs. actual numbers. This will allow MBI to evaluate the strength of their budgeting process. The comparison should help MBI better prepare for future budgets, in that the organization will be able to learn from its past and anticipate events or unforeseen occurrences that were not anticipated in previous years.

Currently NBIA's furthest breakdown of incubator type is that of a technology incubator. We feel that a comparison of MBI to all technology incubator averages may not be very meaningful because of the amount of differences between the types of technology incubators. For example the costs

associated with the development of a life science incubator far exceed the costs associated with the development of an information technology incubator. Because of this MBI should either collaborate with the life science incubators so that each of them has better benchmarking figures or recommend to NBIA to collect this more specific information. The life science incubator benchmarks that MBI should strive to obtain would be the Sq Ft costs of many of their expenses.

It is often the case that new plans are being created before the initial plan has a chance to be properly put into practice and assessed. In an article titled *How to Improve Strategic Planning*, it was noted that, “managers need to focus on executing the last Plan’s major initiatives, many of which can take 18 to 36 months to implement fully.” (Dye, 40-49, 2007) This seemed to be the case with MBI’s initiative to track a number of specified metrics in its latest strategic plan. If an excel sheet was created solely for this purpose it would be easier to keep track of each of the strategic plan metrics. Tracking these figures will allow MBI to better assess the effect of each strategic plan task, all of which are focused on improving specific metrics within the strategic plan.

Finally we recommend that MBI works to expand upon its existing relationship with WPI. This will benefit both the university and MBI. Students will obtain lab experience while companies within MBI will be able to take advantage of student knowledge and skills. This is especially important because of Governor Deval Patrick’s Billion dollar initiative to further develop life sciences in Massachusetts. With increased funding, companies within MBI’s incubator facilities will be able to take on more projects and will seek additional help. Furthermore, with valuable hands on experiences like these available to biomedical engineers at WPI, the biomedical engineering department will grow as the number of opportunities in the field continues to increase.

The team feels that these recommendations will prove valuable to MBI. While the team faced restraints and was unable to accomplish some of what was intended, we feel strongly that we, along with MBI, have benefited, and will continue to benefit from the project. The team learned much about MBI specifically as well as the Incubator industry as a whole. We gained business experience through meetings with CEOs, interviews with Board Members, and by working closely with accountants in preparing financial documents. MBI will benefit from the findings in our work and from the fresh perspective of the business offered by the team. We appreciate the opportunity given to us and only hope that you benefit from our work as much as we have benefited from working with you.