DETERMINING WHETHER OR NOT THE PITTSBURGH PENGUINS SHOULD GET FUNDING TO BUILD A NEW ARENA

INTRODUCTION

Losing the Pittsburgh Penguins to another city would be an economic and social disaster for the City of Pittsburgh. Currently, the future of the Pittsburgh Penguins without a new arena is doubtful. However, so is the notion of selling a new arena to taxpayers in a region still divided over the extensive use of public funds for the new convention center, PNC Park (home of the Pittsburgh Pirates), and Heinz Field (home of the Pittsburgh Steelers). Why do the Penguins need a new arena?

Without a new arena, the Lemieux Group may have to sell the team to another owner who would probably move the franchise to another city. The reason why they would ultimately have to sell the team is because NHL clubs with new arenas can gross up to 50 percent more revenue than clubs operating in older arenas. Currently, the Penguins play in Mellon Arena, which is the oldest and second smallest hockey rink in the NHL (the closest being Madison Square Garden in New York City, which opened in 1968). Originally built for an opera company, Mellon Arena lacks the large number of club seats and luxury boxes that produce substantial revenue in the NHL's newer arenas. Without such revenue, the Penguins rank in the bottom third in the league in arena-generated income.

In late summer of 1999, the Lemieux Group purchased the Pittsburgh Penguins in federal bankruptcy court and since then has made them financially stable, even reporting a modest profit of $2 million dollars after last years season. However, in order for them to compete among other franchises in the NHL, the Penguins strongly believe that they must have a new arena in order to keep the franchise in Pittsburgh. In turn, many taxpayers are still seething over the fact that tax dollars funded 75 percent of the cost of building the new Pirates and Steelers stadiums.

With the question of whether or not to publicly fund the building of a new arena looming over the heads of local and state politicians, there are many important factors that must be considered before making their final decision. Therefore, we have

designed a decision making model based on these various factors to determine what road the politicians should take.

CREATING THE MODEL

The model for making a decision on funding was designed using a benefits, costs, opportunities, and risks model. This model weighs each of these factors differently. Benefits multiplied by Opportunities will be divided by the quantity costs multiplied by risks (B*O/C*R). The benefits and opportunity models will indicate the decision that contains the most benefits and opportunities, whereas the risk and cost models indicate the decisions that are most costly and risky.

Facts

- Pennsylvania's state debt limit would increase by $90 million
- Current state funding includes the following amounts
    - $10 million for Pitt's Petersen Events Center
    - $2 million for the Dinosaur Hall at the Carnegie Museum of Natural History
    - $15 million for the pilot project at California University of Pennsylvania to construct a low-speed magnetic levitation train
- The Sports and Exhibition Authority is "contractually obligated" to have a financing plan for a new arena by the summer of 2002
- Last year, the Mellon Arena booked 120 events, including all Penguins home games
- The Crawford Square development, just east of the arena, has been a tremendous success, with homes worth more than $200,000
- The Pirates put in almost $48 million in private funds for their new ballpark (about 18% of the total cost)
- The total cost for the new arena would be $270 million
- Under the plan, the Penguins would be a tenant in the arena and would pay $3 million a year in rent
- $11.5 million would be sourced federally
- $3.4 million would be sourced from the city's water and sewer authority

- $3.2 million would be sourced from interest earnings on bonds
- $11 million was spent by the Lemieux group to buy the former St. Francis Central Hospital, the site where the new arena would go
- $108 million would be sourced privately, including $50 million in bonds, plus money from the sale of naming rights, the sale of personal seat licenses and the $11 million already spent by the Lemieux group
- The new arena could host up to 128 revenue generating events each year
- The current Pittsburgh economy is in a slump
- The current Mellon Arena was just refurbished 3 years ago

Discussion of Alternatives

The following three alternatives are considered because they are obviously the only decisions that can be made regarding this matter.

Building a new arena

Legislature would accept the proposal and provide the necessary funding to demolish the current arena and build the new one.

Refurbishing the old arena

Legislature would deny the proposal to build a new arena but considers provided funding (at a much lesser amount) to renovate and improve the current facility (Mellon Arena). This could include better seating, a more comfortable atmosphere and just general improvements on the structure itself. This will at least show some concern for the team on part of the government.

Staying with the current arena

Legislature would deny the proposal to build a new arena as well as not consider making any improvements upon the current one. This will show a complete lack of interest on the government's part in terms of hockey in the city of Pittsburgh

Cluster Definitions

Under the benefit, opportunities, cost, and risk models, there are different clusters defined that interact with respect to the control hierarchy established. For each of the four top-level criteria, the control hierarchy consists of social, economic, and political factors.

Alternatives

The alternatives cluster includes the three decisions that can result from the Legislature's decision. Once again they are: To build a new arena, to refurbish the current arena, and to stay with the current arena.

Benefits/Cost/Opportunity/Risk Subcriteria

These clusters include the main factors that can contribute to the total goal (Should the Penguins build a new arena?). These three main factors include Economic, Social and Political nodes.

Economic Benefits Subcriteria

This cluster consists of those economic factors that may be of benefit from the final decision. These factors include the revenue of surrounding businesses, including restaurants and hotels, and the revenue of the Pittsburgh Penguins.

Political Benefits Subcriteria

This cluster consists of the political factor that may be of benefit from the final decision. The main factor is total voter support for the Legislature (including the House and the Senate).

Social Benefit Subcriteria

This cluster consists of the social factors that may be of benefit from the final decision. These factors include the competitive advantage of the team and overall community morale.

Economic Cost Subcriteria

This cluster consists of the economic factors that may incur an immediate cost from the result of the final decision. These factors include investor, local, and state funding.

Political Cost Subcriteria

This cluster consists of the political factors that may incur an immediate cost from the result of the final decision. These factors include protests that may occur on the site of construction and any lobbying and administrative costs that may be incurred in order to influence the final outcome.

Social Cost Subcriteria

This cluster consists of the social factors that may incur an immediate cost from the result of the final decision. These factors include taxes that will be levied on the public and traffic congestion that will result from the final outcome.

Economic Opportunity Subcriteria

This cluster consists of the economic opportunities that may arise down the road as a result of the final outcome. These factors include a boost in the Pittsburgh economy and additional income streams from venues such as circuses and concerts.

Political Opportunity Subcriteria

This cluster consists of the Political opportunities that may arise down the road as a result of the final outcome. The main factor in this cluster is the overall perception of the politicians. A "Mayor that saved/killed Pittsburgh" kind of deal.

Social Opportunity Subcriteria

This cluster consists of the social opportunities that may arise down the road as a result of the final outcome. These factors include additional housing that could be built on the renovated land and additional employment that will come as a result of new businesses that will be located in the new arena.

Economic Risk Subcriteria

This cluster consists of the economic risk that may arise down the road as a result of the final outcome. These factors include a decrease in team revenue, a decrease in the city revenue and a decrease in the revenue of surrounding businesses.

Political Risk Subcriteria

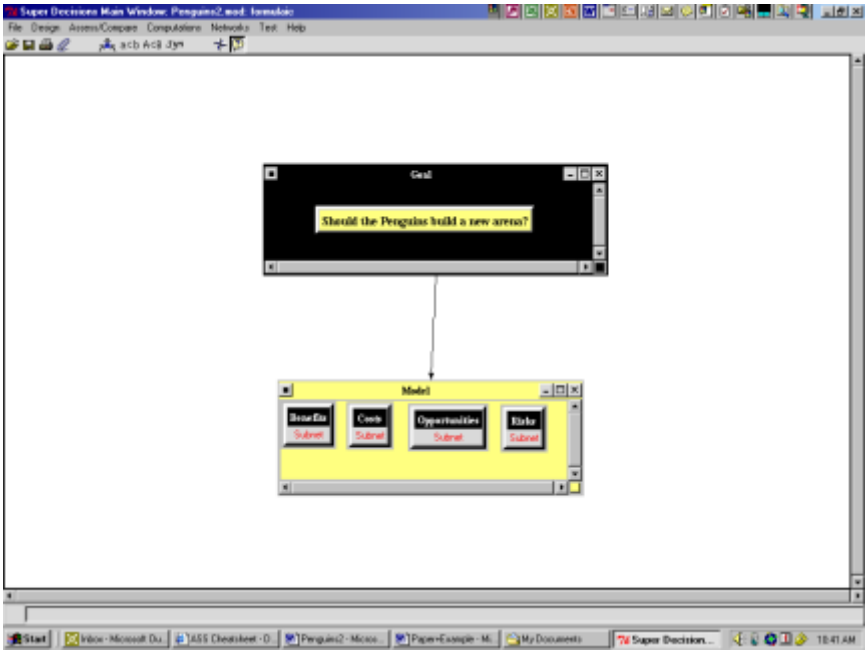
This cluster consists of the political risk that may arise down the road as a result of the final outcome. The main factor is the voter support for future election of the state House and Senate.

Social Risk Subcriteria

This cluster consists of the social risk that may arise down the road as a result of the final outcome. These factors include The Lemieux Group pulling the team out of the city of Pittsburgh, the attitude of administrators of other state projects and the increasing price of tickets, parking and luxury boxes at the arena.

NETWORK

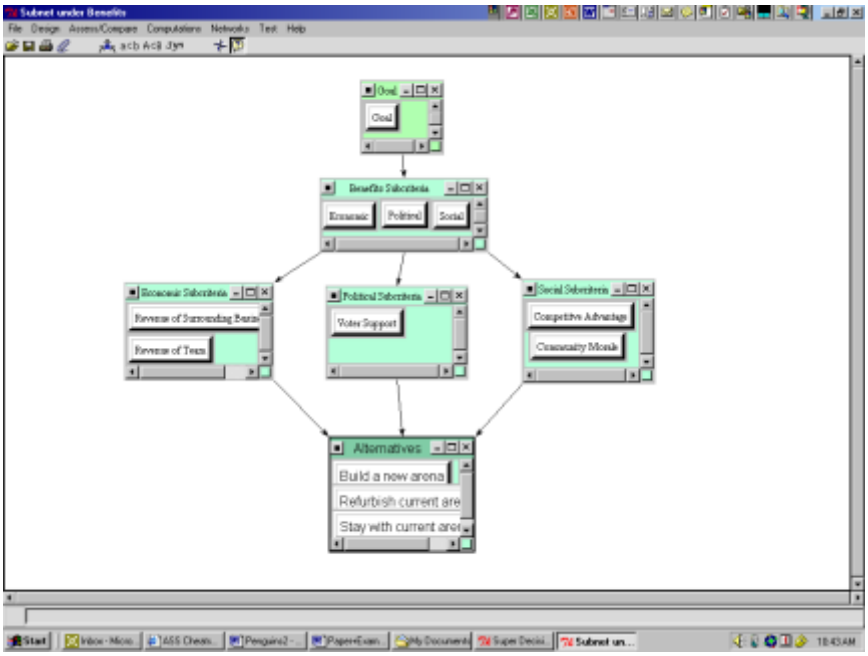
The following screen prints show how the network was built. The first (seen below) is the top-level network of the model. This is the basic structure of the BOCR model. You can see the goal listed at the top with the benefits, costs, opportunities and risks linked with the goal.



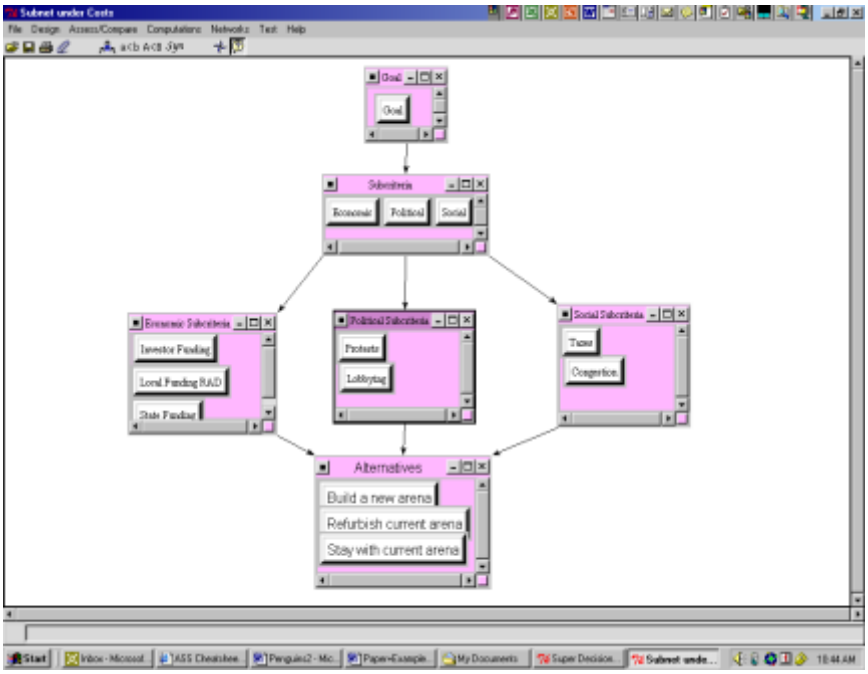
Screen 1: Top-Level Network

The next four screen prints show the network of each of the four top-level factors (BOCR). The structure is similar for each with the goal listed at the top with the immediate subcriteria broken down below the goal (economic, political and social). These subcriteria are then broken down into more specific criteria,

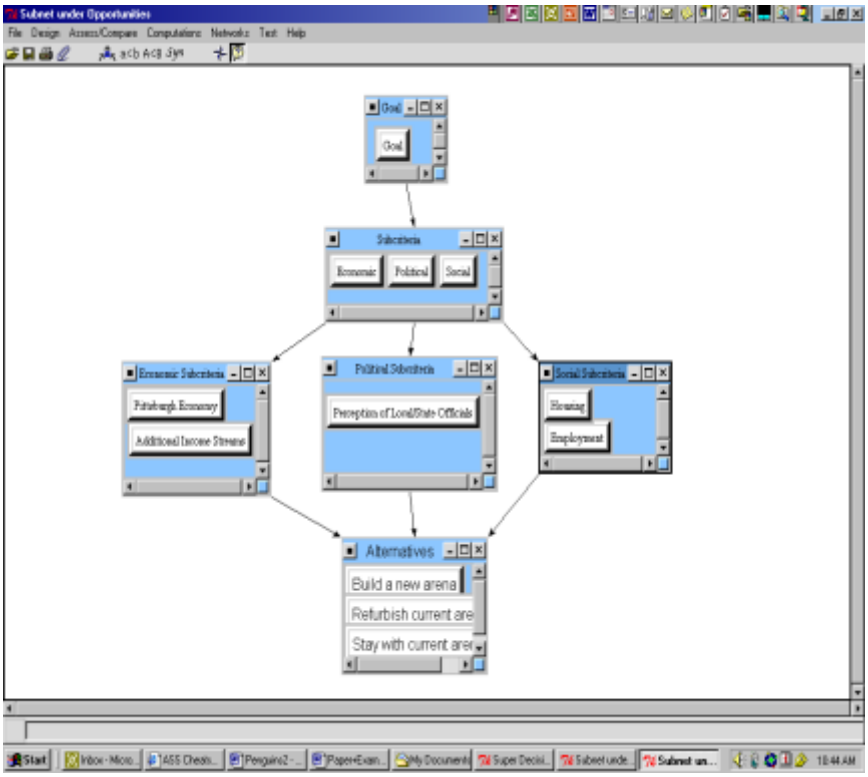
which is then linked ultimately with our alternatives (decisions about the arena project).



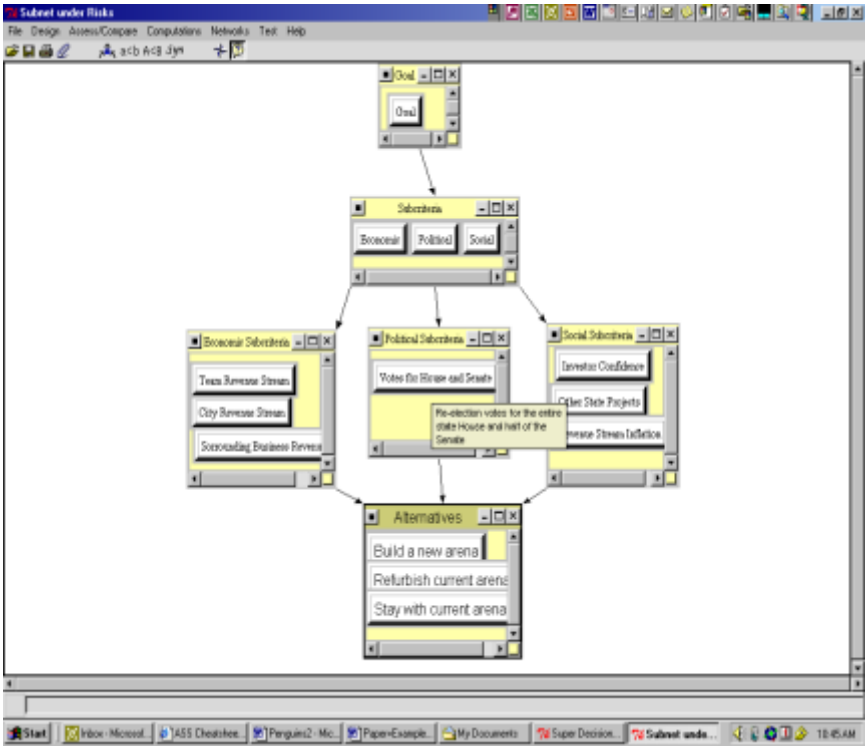
Screen 2: Benefits Network



Screen 3: Costs Network



Screen 4: Opportunities Network

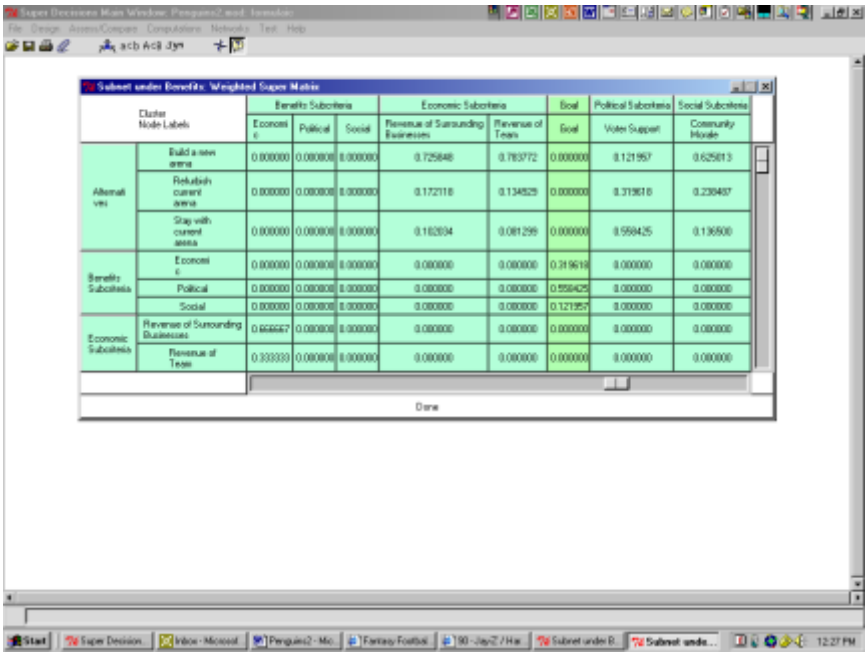


Screen 5: Risks Network

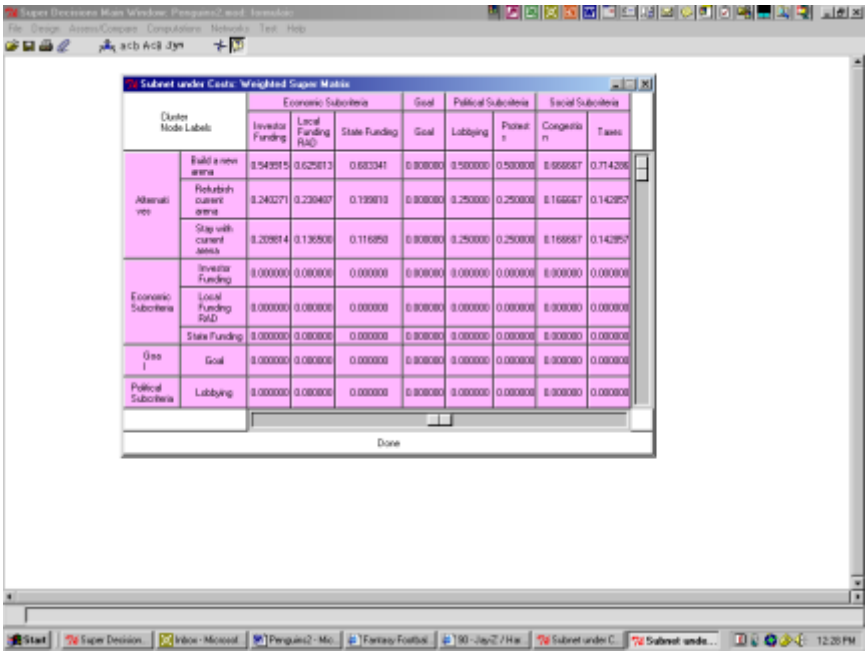
CLUSTER INTERACTION

The following four prints are the weighted supermatrices for each of the top-level controls (BOCR). A supermatrix is a graphical representation of multiplying the cluster weights by the local priority vectors to make each column stochastic. What these explain is the importance each of the alternatives in terms of each of the specific Subcriteria (economic, political, social). For example, in the economic benefit Subcriteria, building a new arena is weighted the most in terms of the revenue of surrounding businesses (.725848). This is expected as the revenue of these businesses can only increase with a new arena bringing in customers. In another example, in the social cost Subcriteria, building a new arena is again weighted the most in terms of taxes on the public. Again, this is obvious being that the public will be taxed in order to gain funds to build the arena.

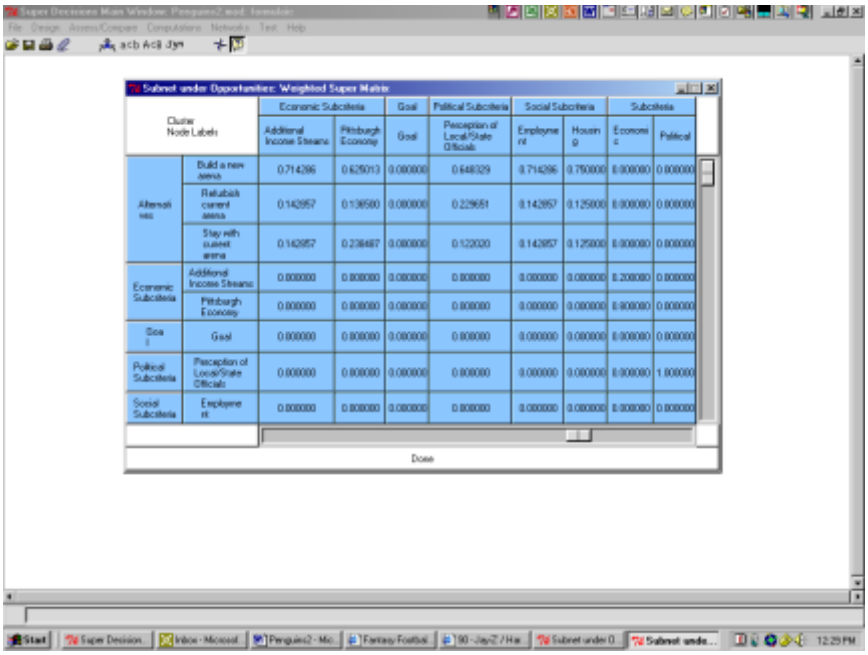
Benefits Weighted Supermatrix



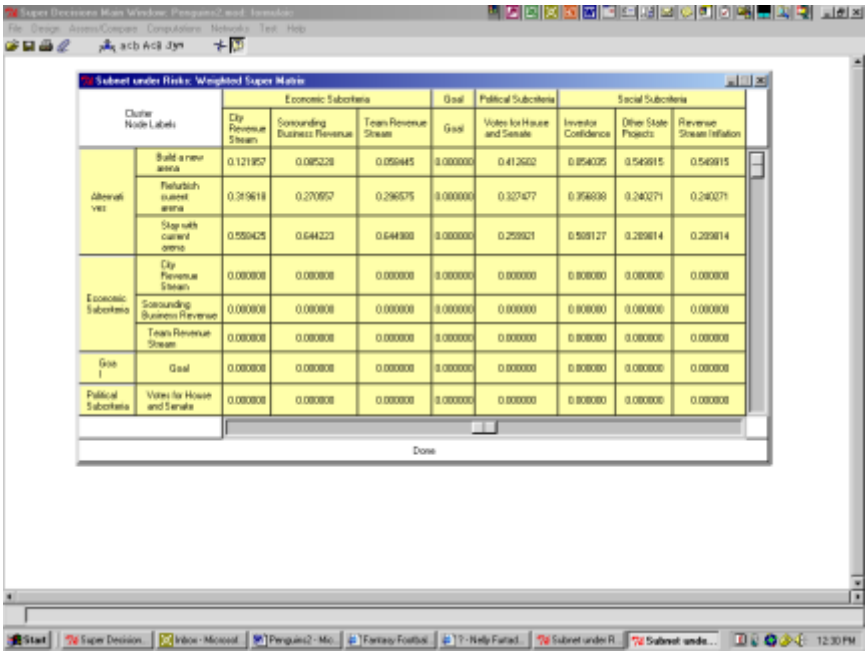
Costs Weighted Supermatrix



Opportunities Weighted Supermatrix

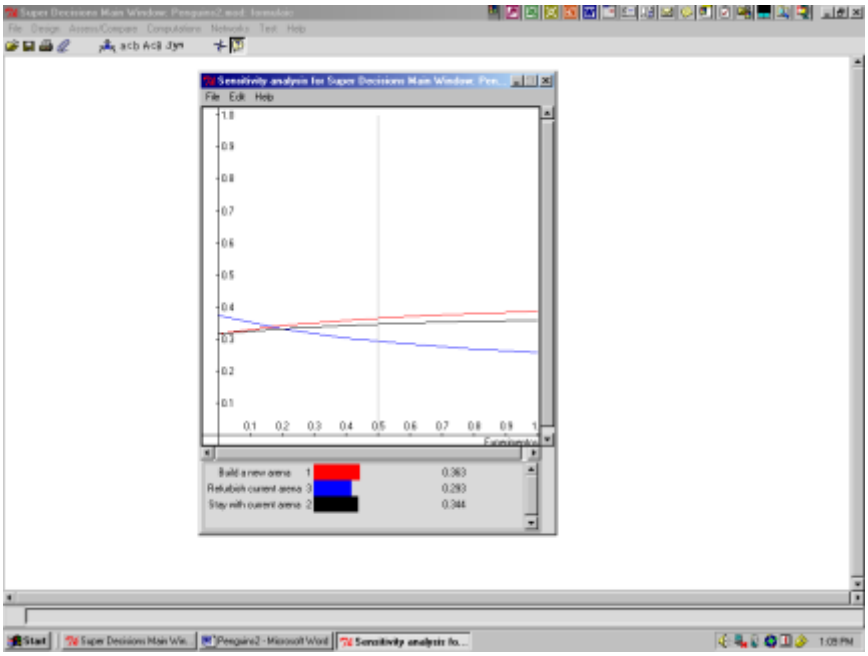


Risks Weighted Supermatrix

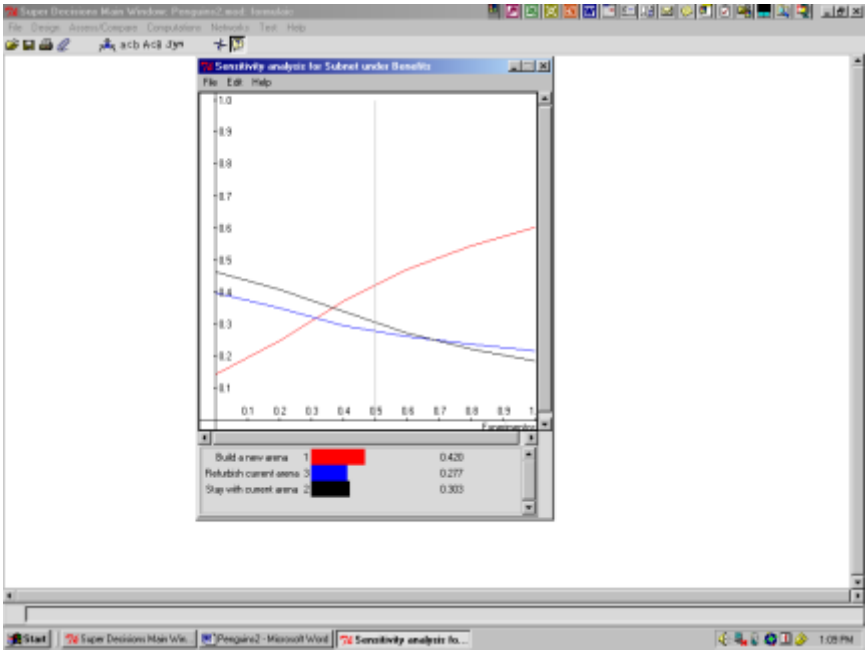


SENSITIVITY ANALYSIS

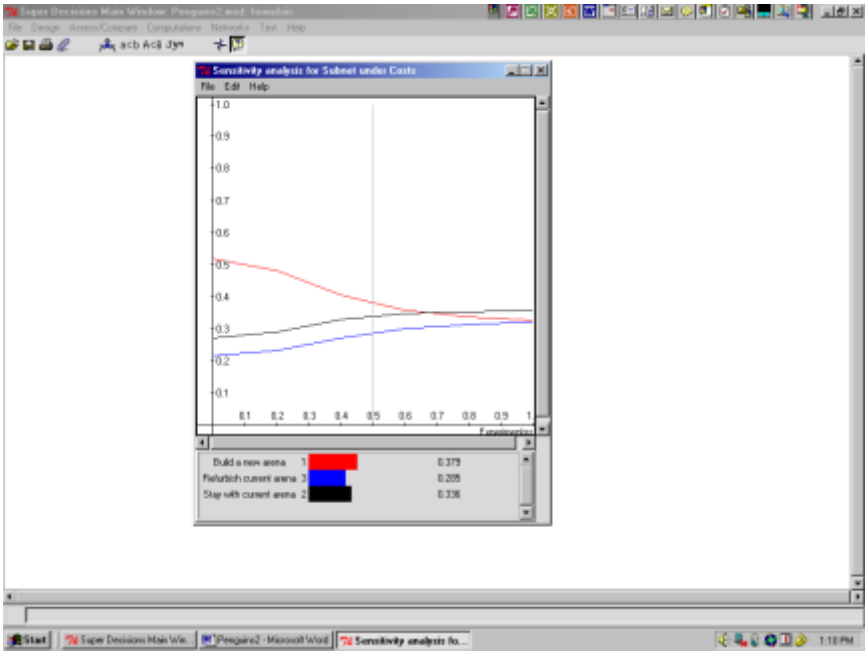
A sensitivity analysis was performed on each of the alternatives with respect to the benefits, costs, opportunities and risks. One was also performed on the whole model at the top-level. The following five sensitivity graphs show such results. If one were to perform this analysis, they could adjust certain criteria weights to see what kind of effect that would have on the final outcome. Many adjustments can be made to see how the ultimate decision will be made. Fore example, if one were to look at the benefits sensitivity graph, they could adjust the weight of benefits on the entire model. You can see by looking at that graph that building a new arena is the best alternative with how benefits is currently weighted. This is because the benefits are much greater within this alternative. But, if one were to adjust the weight of the benefits in this graph to a lower level, then the other two alternatives catch up in terms of total benefits. Similar adjustments can be made on the other graphs to see what effect they have on the alternatives.



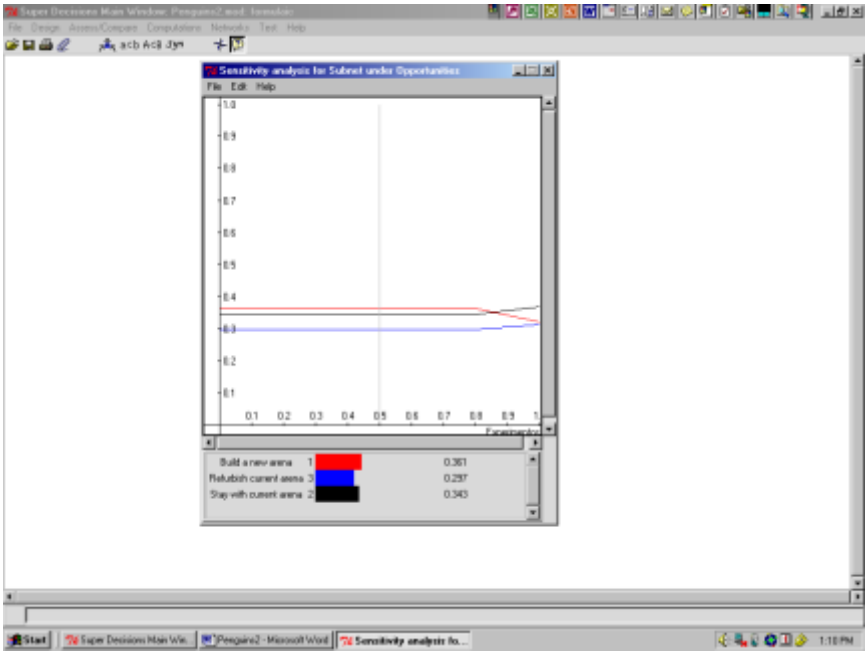
Toplevel sensitivity graph



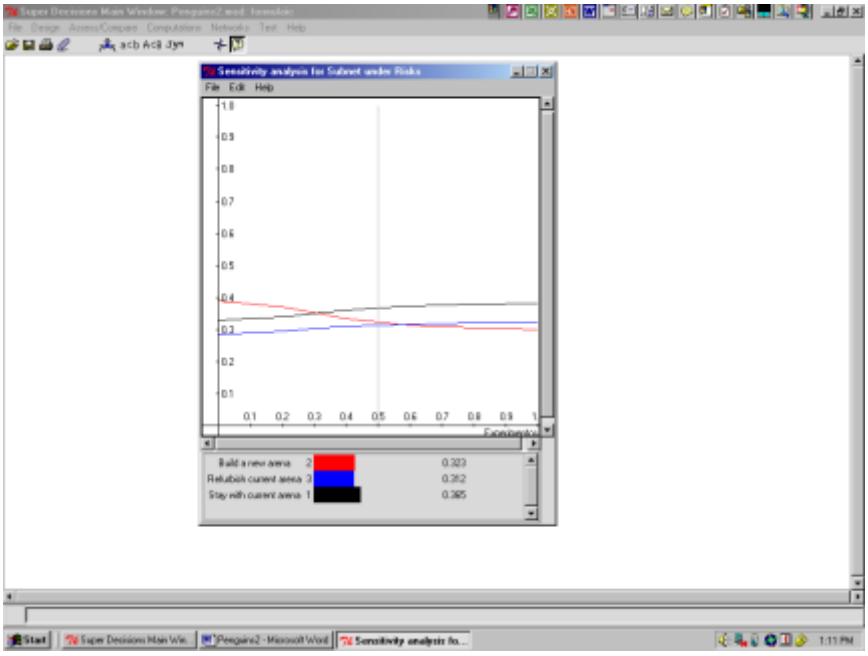
Benefits sensitivity graph



Costs sensitivity graph



Opportunity sensitivity graph



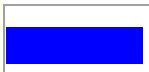
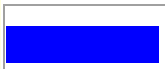
Risks sensitivity graph

RESULTS

Immediately below is the decision that the model has made about the goal. You can see that it was a very close decision, but based on all of the criteria and their respective weights, building a new arena would be best from the point of view of the politicians. Following closely is staying with the current arena and then refurbishing the arena falls not far behind that. This result is not surprising and should be expected when the governments make the final decision. Although some politicians may fall out of grace with some voters for spending more of their hard earned money, the fact that the Penguins may leave town if a new arena isn't build outweighs that factor.

It may come to a surprise to some people that refurbishing the arena is last in the alternatives. But if Pittsburgher's remember, the city just spent millions only a couple years ago refurbishing the current Mellon Arena. How much refurbishing can ultimately be done in an 8-year span? In the year 2006, what could possibly need refurbishing in an arena that was just improved 8 short years ago? That is a main factor in what makes this alternative the least attractive option.

Alternative Rankings

Graphic	Alternatives	Total	Normal	Ideal	Ranking
	Build a new arena	0.6537	0.3608	1.0000	1
	Refurbish current arena	0.5373	0.2965	0.8219	3
	Stay with current arena	0.6209	0.3427	0.9499	2

HOW THE ALTERNATIVE FED FORWARD

The following tables show how each of the top-level controls (BOCR) are prioritized for each of the alternatives. You can see that when building a new arena, obviously opportunities and costs are going to have a significant impact on the final outcome, followed by benefits and finally risk.

When refurbishing the current arena, you are most concerned about the risks involved (e.g. the Penguins moving out of town) followed by the benefits. You can see that the weights of these controls are significantly lower than that of building a new arena.

Finally, by staying with the current arena, there is an obvious strong risk (e.g. The Lemieux Group pulling the team) but also strong benefits for the politicians. Remember, this decision is being made from the politician's point of view. By not spending money to build the new arena, they may gain/lose voter support. Obviously, by staying with the current arena, there are not going to be too many opportunities, thus giving it the lowest weight in priority.

- Top-Level factors vs. Building a new arena

Build a new arena	Total Priority	Rank
Benefits	0.3856	1
Costs	0.5643	1
Opportunities	0.6604	1

Risks	0.2545	3

- Top-Level factors vs. Refurbishing the current arena

Refurbish current arena	Total Priority	Rank
Benefits	0.2566	3
Costs	0.2270	2
Opportunities	0.1867	2
Risks	0.3159	2

- Top- Level factors vs. Staying with the current arena

Stay with current arena	Total Priority	Rank
Benefits	0.3578	2
Costs	0.2086	3
Opportunities	0.1529	3
Risks	0.4296	1

PRIORITY RANKINGS BY CONTROL (BOCR)

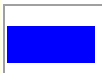
The following four tables show which alternatives were most important with respect to its control. You can see that, with respect to benefits, that building a new arena and staying with the current arena are very close with refurbishing ranking third. Many benefits that you are going to see from building a new arena are more of an economical nature (team revenue, city revenue, revenue of surrounding businesses, etc) while the benefits of the other two options fall into the political arena (voter support for not spending money). All in all, these benefits rank relatively equal, thus showing how close each of these alternatives rank in respect with benefits.

With respect to costs, there's only one real winner. By building a new arena, your economical costs skyrocket in comparison to either refurbishing the current or not building an arena at all. This is obvious due to all of the funding (state, local, investor) that will be needed for the new arena. Overall, this negatively affected the total weight of building a new arena.

When looking at opportunities, again building a new arena stands out among the rest. The opportunities not only make sense economically, but are also socially and politically more numerous and heavily weighted compared to that of refurbished or not doing anything. The increase in revenue for the Pittsburgh economy, the additional revenue streams that will come from venues such as concerts and circuses, and the employment opportunities for the community are just some of the opportunities when building a new arena.

Lastly, although there are many numerous risks to each alternative, there is one that should stand out amongst the rest. It's the Lemieux Group relocating the Pittsburgh Penguins from the city of Pittsburgh. Hockey and Mario Lemieux are very important to this city, and having both of them leave could have a serious effect on the community and economy of the city. By not building a new arena and doing nothing will result in this. Refurbishing the arena may keep the team here temporarily but ultimately, Lemieux has stressed that the team needs a new arena to continue competing in the city of Pittsburgh. This is plainly seen in the fourth table below, where the risk is seen more in refurbishing and staying with the current arena.

Benefit Rankings

Graphic	Alternatives	Total	Normal	Ideal	Ranking
	Build a new arena	0.3856	0.3856	1.0000	1
	Refurbish current arena	0.2566	0.2566	0.6655	3
	Stay with current arena	0.3578	0.3578	0.9281	2

Costs Rankings

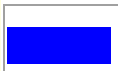
Graphic	Alternatives	Total	Normal	Ideal	Ranking
	Build a new arena	0.5643	0.5643	1.0000	1

	Refurbish current arena	0.2270	0.2270	0.4023	2
	Stay with current arena	0.2086	0.2086	0.3696	3

Opportunity Rankings

Graphic	Alternatives	Total	Normal	Ideal	Ranking
	Build a new arena	0.6604	0.6604	1.0000	1
	Refurbish current arena	0.1867	0.1867	0.2827	2
	Stay with current arena	0.1529	0.1529	0.2315	3

Risks Rankings

Graphic	Alternatives	Total	Normal	Ideal	Ranking
	Build a new arena	0.2545	0.2545	0.5924	3
	Refurbish current arena	0.3159	0.3159	0.7354	2
	Stay with current arena	0.4296	0.4296	1.0000	1

Ultimately, these results could probably be expanded upon in terms of additional criteria to determine a final outcome. But we believe that this is a very good starting point, and that the Lemieux Group could use this as a basis to build a case upon in order to convince the legislature to provide the necessary funds to build a new arena.

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