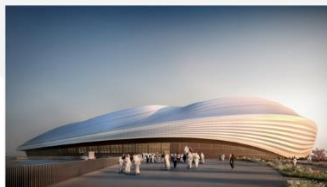




## **RISKS OF QATAR 2022 SOCCER WORLD CUP**



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## 1.0 Executive Summary

This project is in Fulfilment of requirements for Risk Management Module DNSC 6254 in George Washington University. The Project title is the Risks for Qatar 2022 Soccer World Cup.

The Risk Management Process in the Qatar 2022 Soccer World Cup will follow the following steps:

1. Identify
  - a. Identify the Sources and Risks
2. Assess
  - a. Measure Likelihood and Impact
  - b. Synthesis Likelihood and Impact of Events
3. Control
  - a. Examine Mitigation measures
  - b. Decide which Solution to Use and Implement
  - c. Monitor Results

The risks of Qatar organizing the 2022 Soccer World Cup is broadly classified into Political, Economic, Socio-political, Safety/Security and Technology risks. Under these categories we identified the risks or top events that can happen and cause loss to FIFA. These risks were analyzed at the levels of Individual, Institutional and Country.

The Analytic Hierarchy Process (AHP) will be used in the Risk analysis for this Project. In the Expert Choice Comparison, the AHP for the risk management process is evaluated in the following steps:

- Develop the Structure
- Measure
- Synthesize
- Risk Map & Controls
- Iterate and Communicate

## 2.0 Background to Federation International de Football Association (FIFA)

The 2022 soccer world cup was awarded by the Federation International de Football Association (FIFA) to Qatar in 2010 in a very controversial way.

Given that Qatar has not had an experience hosting an event of this magnitude, this project will assess risks of events that could occur during this tournament.

The objectives of FIFA are quote 'to promote the game of football, protect its integrity and bring the game to all by 2026. To fulfill these objectives, FIFA wishes to achieve the following:

1. Grow the Game of football by raising the standards and better engage football community regardless of fender, orientation, creed, or ethnicity
2. Enhance the Experience:
  - **For all:** Provide innovation that will have equally impactful experience to people that watch at home or may not have opportunity to attend live football games
  - **For fans:** Transparent and effective communication through accessible media channels  
For players, coaches, and referees: Improve footballer's performances through technological advances
  - **For commercial affiliates:** Look for new ways to display their brands with maximum scale and impact
3. Build a stronger institution in the football ecosystem through commitment to human rights and diversity and ensuring that all stakeholders are held to the appropriate standards of governance.

Are FIFA objectives threatened by the planned host in Qatar? This project seeks to assess the various risks of events that may occur and be risks to FIFA achieving her objectives.

## 3.0 Analytic Hierarchy Process (AHP)

### 3.1 Overview of the AHP Process

Developed by Thomas Saaty in 1970s, the Analytic Hierarchy Process is a multi-criteria decision-making method that allows decision makers to model a complex problem into a hierarchical structure thus showing the relationships between the goal, objectives, sub-objectives, and alternatives. Based on decomposition, comparative judgement, and hierarchic composition or synthesis of priorities, AHP structures the complex problem into a hierarchy of various levels of objectives and sub-objectives. Comparative judgement is then applied using pairwise comparisons during which evaluators and decision makers can make judgements used to perform evaluations. These judgements, developed from the established priorities, are then synthesized to rank the alternatives with respect to the overall goal and achieve the overall preference. Sensitivity analysis can further be performed to see how well the alternatives compared with each of the objectives and sub-objectives. This analysis can show the relative

importance of each component within the structured hierarchy and be used in conjunction with the final prioritized alternatives to make a decision.

## 3.2 Structuring the Model

Using the AHP process, we have structured our model. We have explained below how the model is structured.

### 3.2.1 Hierarchy of Objectives

The objective for hosting the soccer world cup are: financial, reputation, satisfaction, and environmental. Both the short and long term financial objectives were evaluated. Risk can be reduced here by allowing fans to freely enjoy the events. A successful world cup will boost the reputation not only of Qatar the host country but also of FIFA. To reduce risk, Qatar need to comply with the recommendation made by experts and stick to the standards required for such events. A test for Qatar is also to satisfy soccer fans. However, law local prohibiting certain type of clothing and not allowing fans to drink in the stadiums or on the streets will not contribute to the satisfaction of the fans. Tourism in Qatar will take a hit if Qatar fails to deliver.

We have identified the objectives of FIFA and focused on the consequences that will emanate from the events. The consequence of events is the loss that will occur from not achieving the objectives. The hierarchy of objectives was identified using the top-down approach and to better cope with the complexity of information regarding the objectives and the sub-objectives.

The objectives are namely: Financial, Reputation, Environmental and Satisfaction.

Objectives	Financial		Reputation		Environmental		Satisfaction	
Sub-objectives	Short term	Long term	FIFA	Qatar	Tourism	Soccer Fans	FIFA	Qatar

Figure 3.0 illustrates the structure in the Expert choice Comparison model

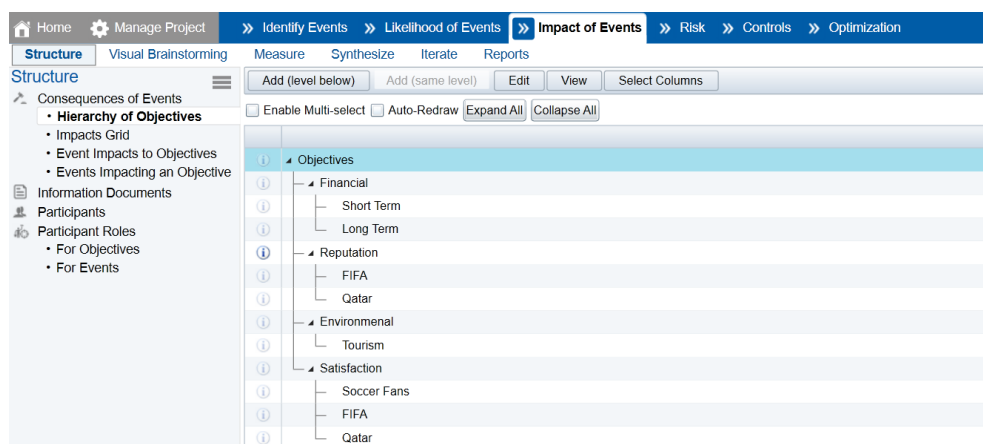
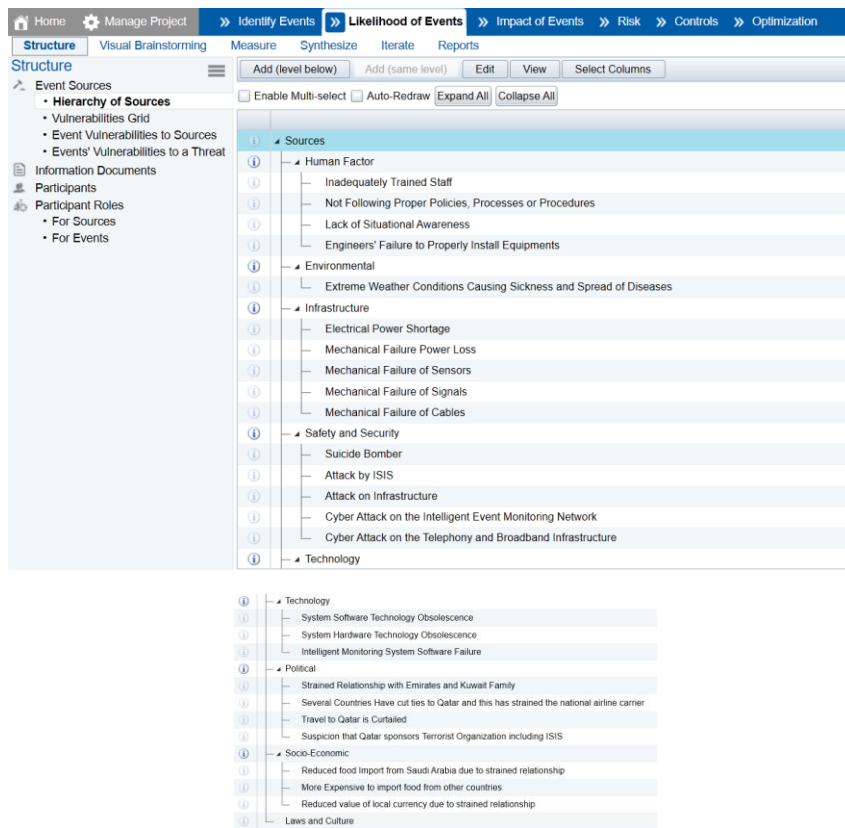


Figure 3.1 illustrates the structure in the Expert Choice Comparison tool.



### 3.2.2 Events that are threats to FIFA Objectives

In the background Information we have stated the objectives of FIFA. In this view we have tried to identify events that pose threats to FIFA objectives. Sources are known as threats or hazards that cause events to occur. The following are the threats that would cause the events identified above

1. Human factor: the inadequately trained staff represents a threat because they will lack the necessary skills to take appropriate action to prevent events from occurring.
2. Environmental factor: the extreme weather in Qatar may cause soccer fans to get sick.
3. Infrastructure factor: infrastructure is a key to a successful soccer world cup. Qatar's infrastructure has never been tested before. There are reports that certain stadiums may not be to the required standards.
4. Technological factor: technology is a tool that will facilitate the control of event. However, the technological experience in Qatar is not proven.
5. Political factor: Qatar is in an open conflict with its neighbors. There is a restrained on the mobility of people and goods between Qatar and its neighbors.
6. Socio-economic factor: because Qatar conflicts with its neighbors, it will cost more to import goods.

7. Safety and security factor: Most soccer fans are used to the western ways of life. Fans like to drink and have fun in open air. Local laws however prohibit such conduct. This will reduce revenue, as they will be less money spent for fun.

### 3.2.3 Identify Events

The identification of many risk events that will cause a loss to the organization of the soccer world by Qatar in 2022 was done and summary as follows:

1. Failure of first responders to work accordingly: Given that Qatar has never hosted an event of such magnitude, its first responders lack the required experience to handle emergencies should they occur.
2. Illegal and restricted activities: Qatar has one the most restrictive laws in the world. This will limit revenue as soccer fans and other people will not fully enjoy the events due to them not being able to drink and eat what they like.
3. Someone detonating a bomb: a terrorist attack is one of the most feared events in today's world. If such event is to occur, it would undoubtedly incur loss.
4. Limited flights and constrained availability: Qatar is in regional conflict with its neighboring countries. These latter have banned Qatar from using their airspace and ports. This may reduce the number of fans going to Qatar, as certain flights may need to pass by those neighboring countries.
5. Qatar's failure to deliver: There is no doubt that hosting an event such as the soccer world cup is to boost the economy and the host country's image. A failure on this will certainly affect the host country.

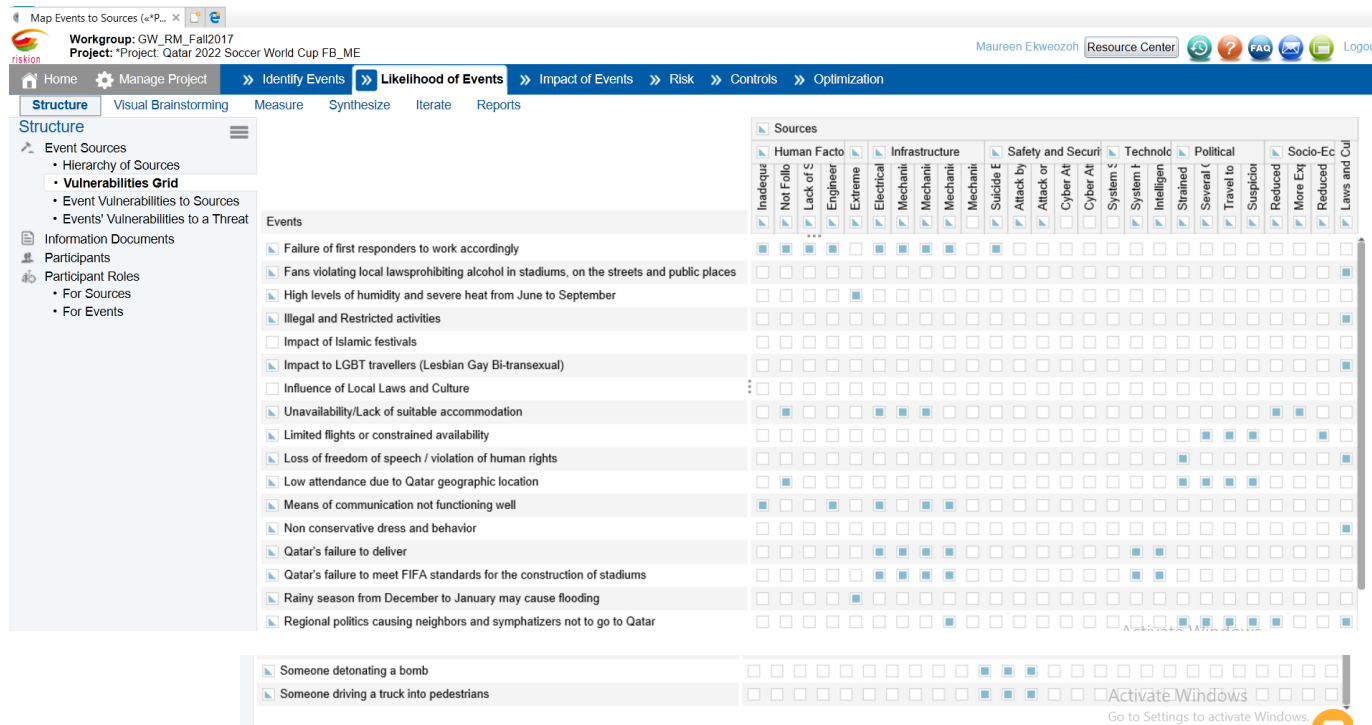
Figure 3.2 shows the summary of events

Home Manage Project Identify Events Likelihood of Events Impact of Events Risk Controls Optimization	
Identify Visual Brainstorming	
Identify	
Add / Edit	
Add Insert Below Edit Attributes Select Columns	
Enable Multi-select	
Unique ID	Events
[04]	Failure of first responders to work accordingly
[05]	Fans violating local lawsprohibiting alcohol in stadiums, on the streets and public places
[15]	High levels of humidity and severe heat from June to September
[18]	Illegal and Restricted activities
[20]	Impact of Islamic festivals
[17]	Impact to LGBT travellers (Lesbian Gay Bi-transsexual)
[13]	Influence of Local Laws and Culture
[07]	Unavailability/Lack of suitable accommodation
[11]	Limited flights or constrained availability
[12]	Loss of freedom of speech / violation of human rights
[08]	Low attendance due to Qatar geographic location
[06]	Means of communication not functioning well
[19]	Non conservative dress and behavior
[10]	Qatar's failure to deliver
[09]	Qatar's failure to meet FIFA standards for the construction of stadiums
[16]	Rainy season from December to January may cause flooding
[03]	Regional politics causing neighbors and symphatizers not to go to Qatar
[14]	Sand and Dust Storms
[01]	Someone detonating a bomb
[02]	Someone driving a truck into pedestrians



### 3.2.4 Likelihood of events - Vulnerabilities Grid

The identified events were mapped to sources as can be seen on figure 3.3 below.



### 3.2.5 Roles of Participants

The following participants were given access to Riskion to conduct an evaluation of the risks of Qatar hosting the 2022 soccer world cup. The roles assigned in the evaluation is relative to the responsibilities and their expertise and knowledge areas.

- Haidari, evaluated the project as FIFA representation to assess the progress Qatar's readiness to host the event. His role is to ensure Qatar adheres to FIFA's standards.
- Hamilton, evaluated the project as an independent consultant to make recommendation to both Qatar authorities and FIFA on ways to make the 2022 soccer world cup a success.
- Agada, is the Qatari authority in charge of overseeing Qatar's 2022 soccer world cup project.

Figure 3.4: Roles of Participants

The screenshot shows the Riskion software interface. The top navigation bar includes 'Home', 'Manage Project', 'Identify Events', 'Likelihood of Events', 'Impact of Events', 'Risk', 'Controls', and 'Optimization'. The left sidebar shows the project structure, including 'Event Sources', 'Hierarchy of Sources', 'Vulnerabilities Grid', 'Event Vulnerabilities to Sources', and 'Events' Vulnerabilities to a Threat. The main area displays a table listing participants and their roles. The table columns include 'Email Address', 'Participant Name', 'Permission', 'Has Data?', 'Disabled?', and 'Action'. The table lists participants such as Admin user, Francis Bombaito, Haidar Haidari, Huwayza Alqahtani, Lisa Samuel Hamilton, Lisa Samuel Hamilton, Maureen Ekweozoh, Nicholas Stavrakakis, Ofuni Agada, and Professor Forman.

Email Address	Participant Name	Permission	Has Data?	Disabled?	Action
Admin	Admin user	Project Manager	No	<input type="checkbox"/>	
bombaito@gwu.edu	Francis Bombaito	Project Manager	Yes	<input type="checkbox"/>	
haidari@gwu.edu	Haidar Haidari	Evaluator	Yes	<input type="checkbox"/>	
huwayza@gwu.edu	Huwayza Alqahtani	Evaluator	No	<input type="checkbox"/>	
isuzette219@gwu.edu	Lisa Samuel Hamilton	Evaluator	No	<input type="checkbox"/>	
isuzette219@gwu.edu	Lisa Samuel Hamilton	Evaluator	Yes	<input type="checkbox"/>	
maureene16@gwu.edu	Maureen Ekweozoh	Project Manager	Yes	<input type="checkbox"/>	
nstavrakakis@gwu.edu	Nicholas Stavrakakis	Project Manager	No	<input type="checkbox"/>	
ofuni_agada@gwu.edu	Ofuni Agada	Evaluator	Yes	<input type="checkbox"/>	
forman@gwu.edu	Professor Forman	Project Manager	Yes	<input type="checkbox"/>	

## 4.0 Data Limitation

A total of 5no evaluators were assigned roles and areas of evaluation in Riskion. However due to personal constraints and time factors, the evaluators did not record 100% participation because of work constrains. The project Managers however recorded 100% participation in the Riskion assessment.

## 5.0 Measurement Methods

Expert Choice supports relative and absolute measurements for deriving priorities for importance of objectives as well as priorities of the events with respect to the objectives. All measures derived with Expert Choice are ration scale measures which are also mathematically meaningful.

Expert choice also support direct rating scale, utility curve, step function, pairwise of probability and pairwise of known likelihood as well as relative measurement pairwise comparisons.

### 5.1 Measurement by Objectives and Events

For the objectives, we applied pairwise comparisons to derive the priorities for the impact of events while for impact events we applied the rating scale as depicted in Expert choice Comparion.

Figure 5.0 show the measurement by objectives while Figure 5.1 shows measurement by events

Measure	Measurement Type	Measurement Scale	Action	# of Elements	# of Comparisons in Cluster	# of Comparisons (Default: All pairs)	Default: One pair	Default: One pair	Default: One pair
Objective	Pairwise Comparison	Pairwise Comparison	Copy	4	4*14-137=6	All pairs (maximum)	One pair	Verified	Verified
Objective	Pairwise Comparison	Pairwise Comparison	Copy	2	2*12-12=1	All pairs (maximum)	One pair	Verified	Verified
Objective	Pairwise Comparison	Pairwise Comparison	Copy	2	2*12-12=1	All pairs (maximum)	One pair	Verified	Verified
Objective	Pairwise Comparison	Pairwise Comparison	Copy	1	1*12-12=0	All pairs (maximum)	One pair	Verified	Verified
Objective	Pairwise Comparison	Pairwise Comparison	Copy	3	3*12-12=3	All pairs (maximum)	One pair	Verified	Verified

Measure	Measurement Type	Measurement Scale	Action	# of Elements	# of Comparisons in Cluster	# of Comparisons (Default: All pairs)	Default: One pair	Default: One pair	Default: One pair
Objective	Rating Scale	Rating Scale	Copy	15	15	15	15	15	15
Objective	Rating Scale	Rating Scale	Copy	6	6	6	6	6	6
Objective	Rating Scale	Rating Scale	Copy	18	18	18	18	18	18
Objective	Rating Scale	Rating Scale	Copy	18	18	18	18	18	18
Objective	Rating Scale	Rating Scale	Copy	18	18	18	18	18	18
Objective	Rating Scale	Rating Scale	Copy	17	17	17	17	17	17

Figure 5.1 shows summary of measurements used to evaluate impact of events on objectives and the ratings scale on Impact of events

Measure	Measurement Type	Measurement Scale	Action	# of Elements	# of Comparisons in Cluster	# of Comparisons (Default: All pairs)	Default: One pair	Default: One pair	Default: One pair
Objective	Rating Scale	Rating Scale	Copy	15	15	15	15	15	15
Objective	Rating Scale	Rating Scale	Copy	6	6	6	6	6	6
Objective	Rating Scale	Rating Scale	Copy	18	18	18	18	18	18
Objective	Rating Scale	Rating Scale	Copy	18	18	18	18	18	18
Objective	Rating Scale	Rating Scale	Copy	18	18	18	18	18	18
Objective	Rating Scale	Rating Scale	Copy	17	17	17	17	17	17

Figure 5.2 shows details of the Likelihood Rating scale as depicted in Expert choice comparion.

**Edit existing scale**

Measurement Method: Rating Scale  
 Measurement Scale: Default Likelihood Scale  
 Scale name: Default Likelihood Scale  
 Description: Default Ratings Scale for Sources and Vulnerabilities. Participants can enter likelihoods between given intensities

Intensity Name	Likelihood	Description
Certain	1.0000	
Almost Certain	0.9900	
Very likely	0.9000	
Fairly likely	0.7500	
50/50	0.5000	
Not uncommon	0.3090	
Occasionally	0.0500	

**Edit existing scale**

Measurement Method: Rating Scale  
 Measurement Scale: Default Likelihood Scale  
 Scale name: Default Likelihood Scale  
 Description: Default Ratings Scale for Sources and Vulnerabilities. Participants can enter likelihoods between given intensities

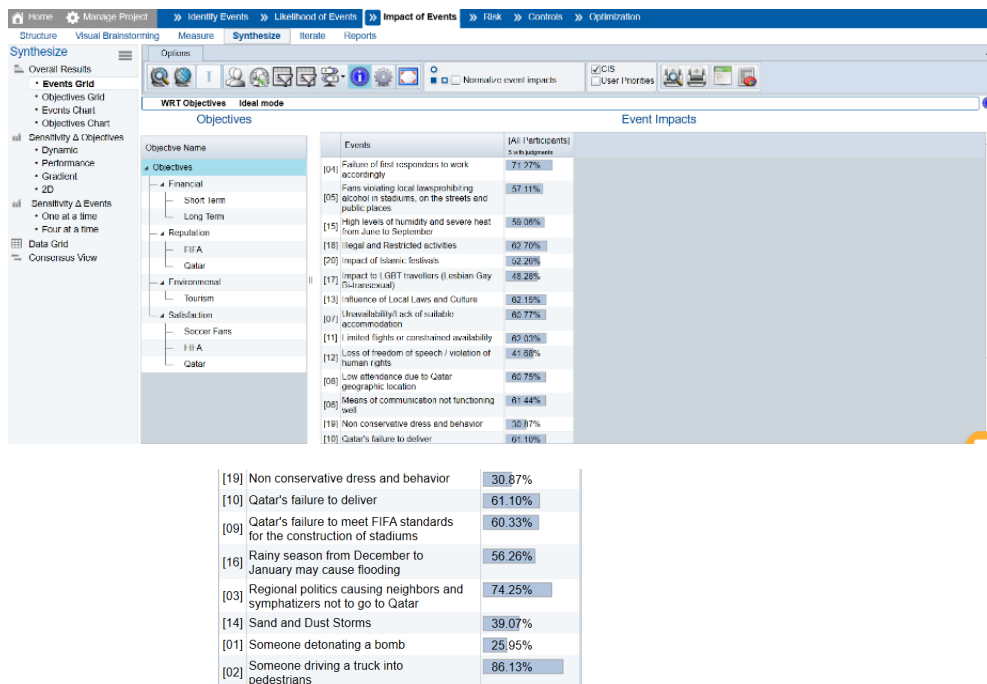
Intensity Name	Likelihood	Description
Not uncommon	0.3090	
Occasionally	0.0500	
Rarely	0.0100	
Once a year	0.0027	
Once a decade	0.0003	
Almost never	0.0001	One in ten thousand
Once in a lifetime	0.0000304	One day in lifetime of days (90 years)

## 6.0 Synthesis

The synthesis is done after all judgments have been entered by the evaluators. All results are derived as ratio scale measurements hence are mathematically meaningful. Further in the synthesis we also carried out sensitivity on the results using Dynamic and Performance sensitivity analysis.

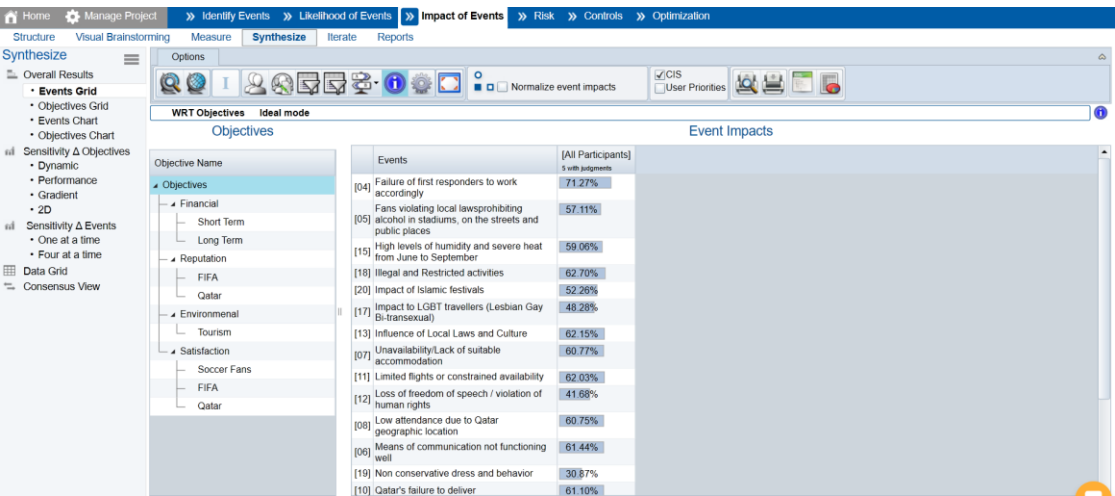
We also carried out sensitivity on the impact of the events on objectives and have shown the results in 2D matrix, gradient, one at a time, four at a time formats in Expert choice comparion. Further details to Impact of events as affects Financial, Reputation and Satisfaction objectives are provided on the sensitivity of performance.

Figure 5.3 - Impact of events on objectives - overall



As shown in figure 5.3, the highest recorded impact of events is someone driving a truck into pedestrians (86.13%). Next is regional politics causing neighbors and sympathizers not to go to Qatar 74.25%

Figure 5.4 - Impacts of Events Grid on objectives



[19]	Non conservative dress and behavior	30.87%
[10]	Qatar's failure to deliver	61.10%
[09]	Qatar's failure to meet FIFA standards for the construction of stadiums	60.33%
[16]	Rainy season from December to January may cause flooding	56.26%
[03]	Regional politics causing neighbors and symphatizers not to go to Qatar	74.25%
[14]	Sand and Dust Storms	39.07%
[01]	Someone detonating a bomb	25.95%
[02]	Someone driving a truck into pedestrians	86.13%

Figure 5.5 – Impact of events chart

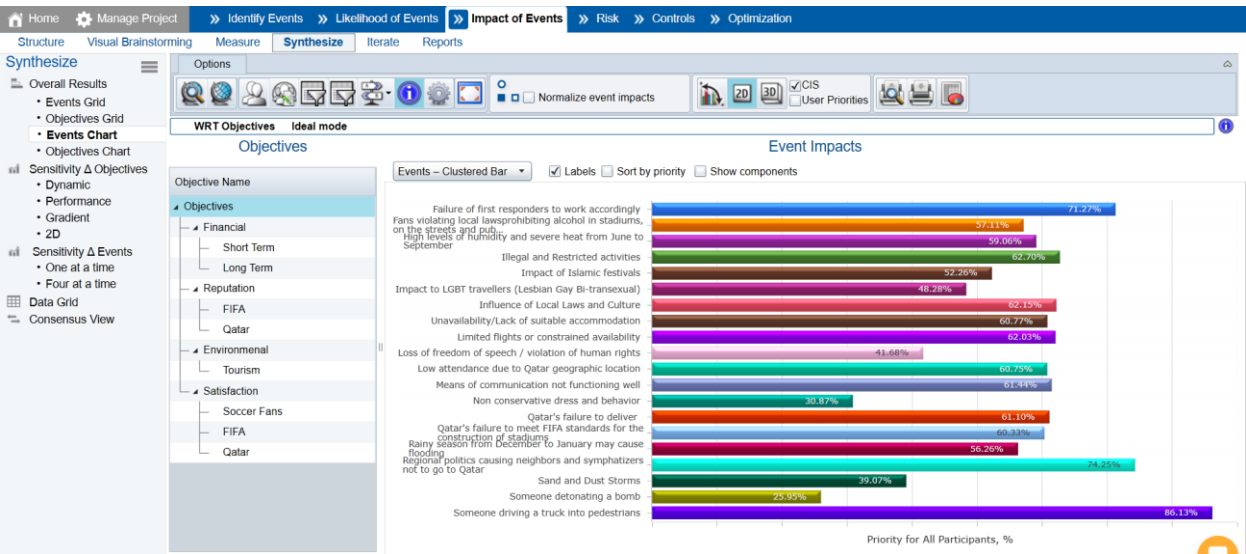


Figure 5.6 -Impact of events on objectives

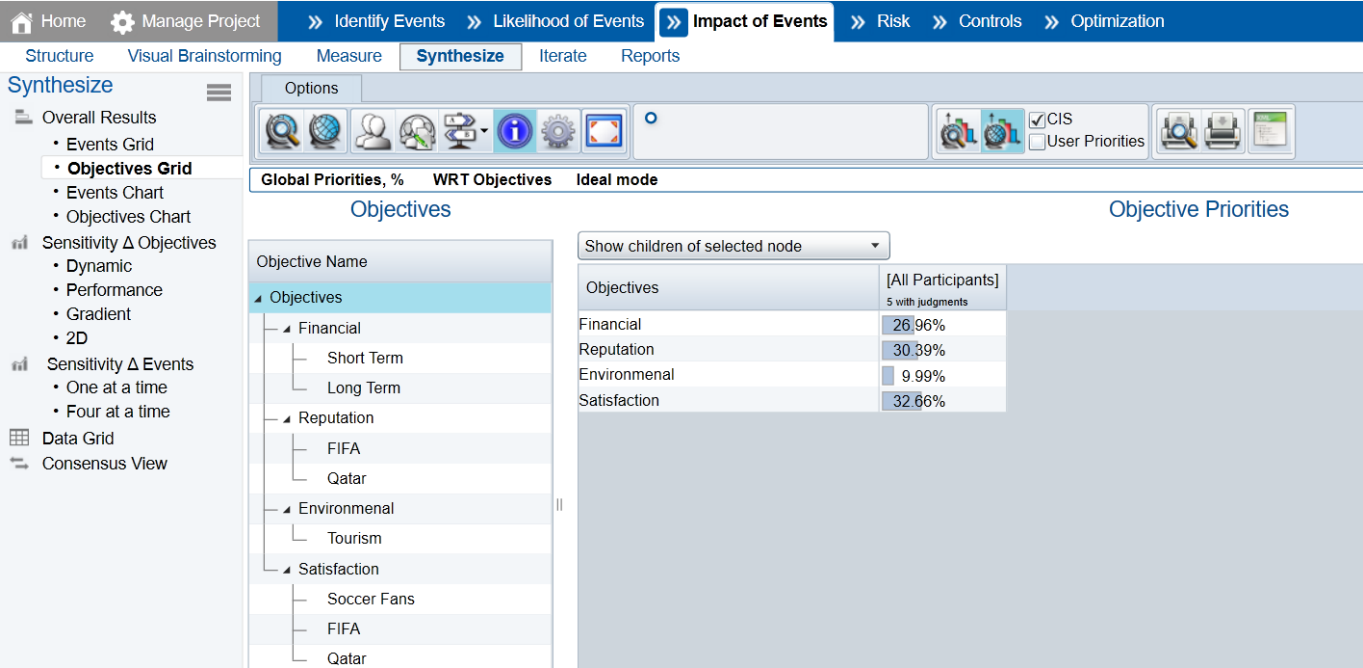


Figure 5.7 - Objective Priorities chart

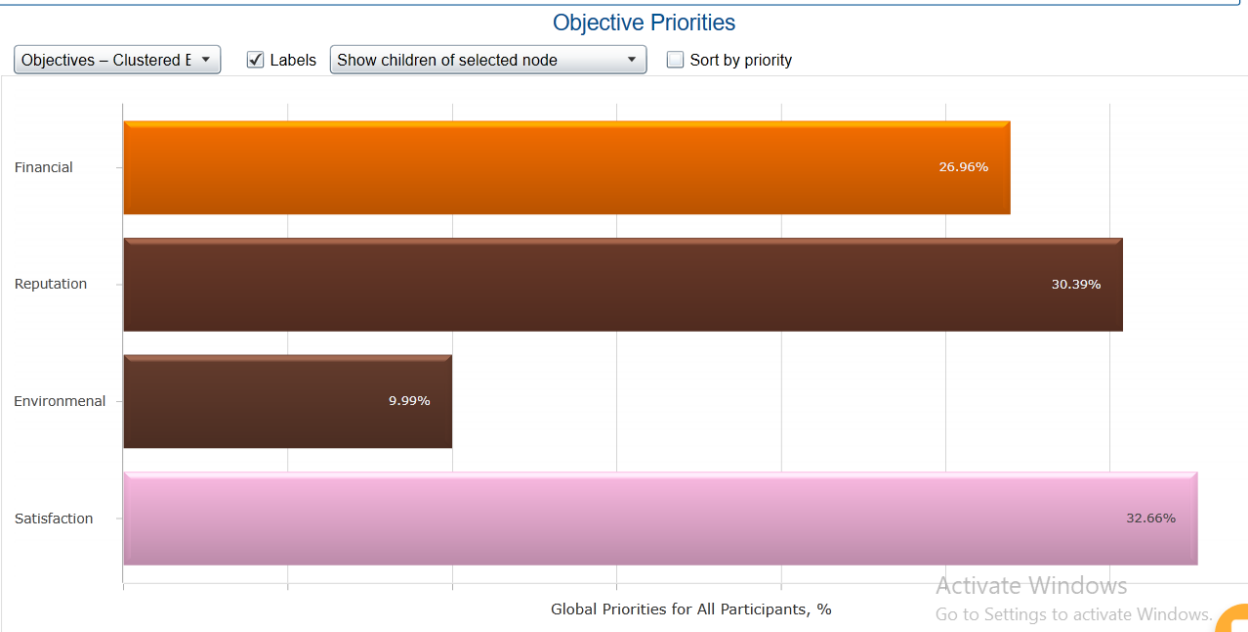
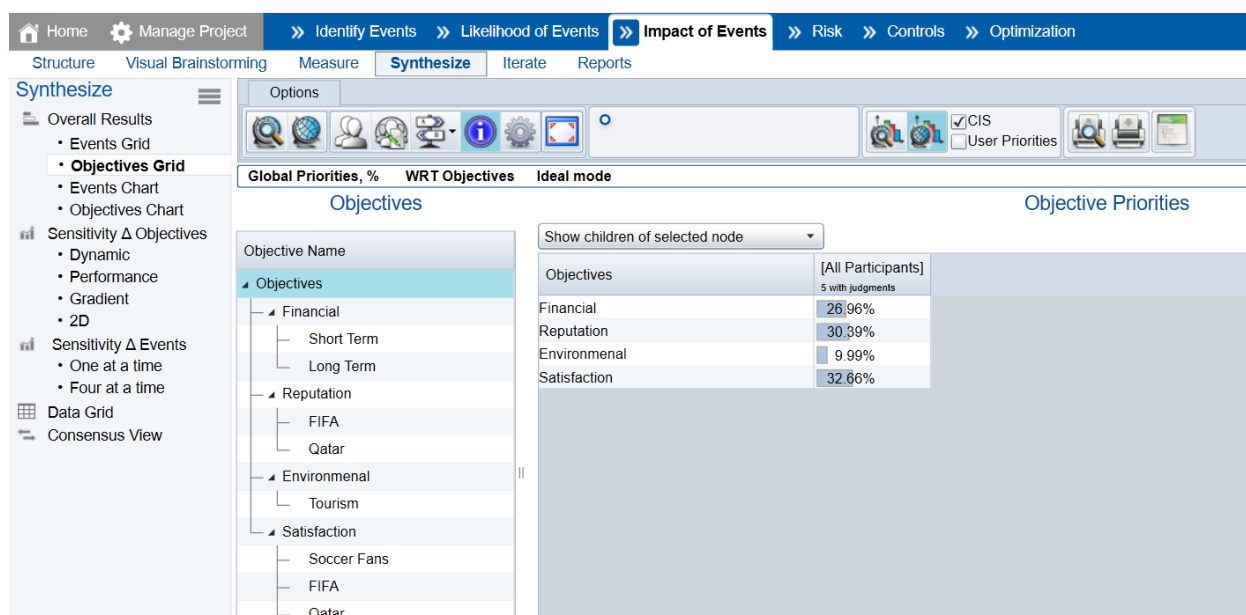


Figure 5.8 – Impact of events on objectives



According to Figure 5.8 Satisfaction was impacted 32.6%, Reputation 30%, Financial 26% and Environmental 9.99%

Figure 5.9 - Dynamic sensitivity analysis on Objectives

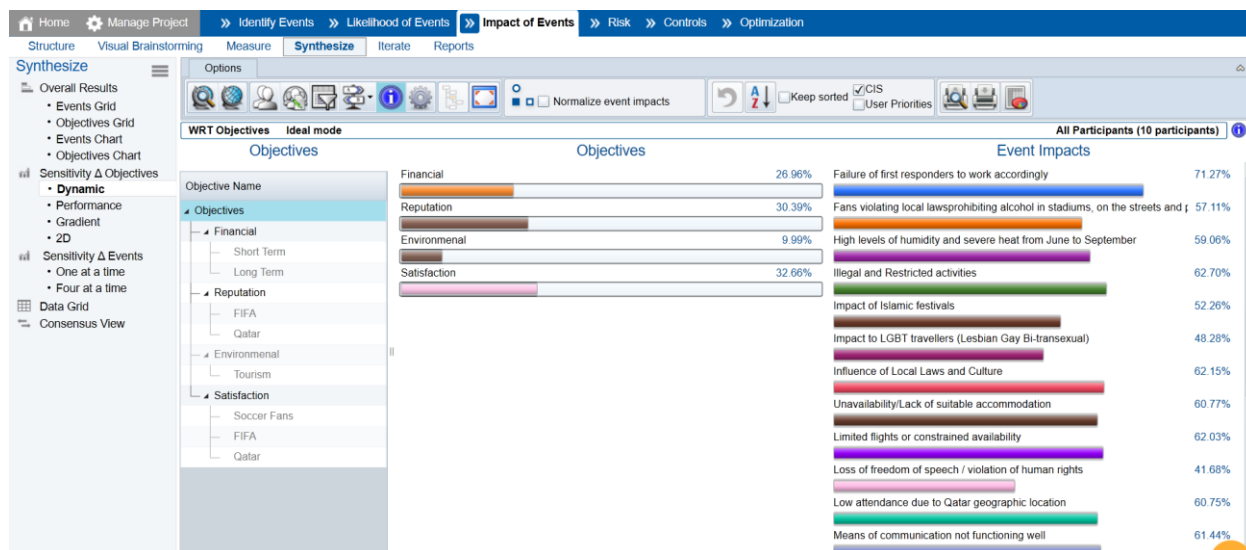


Figure 5.9 shows further detail to the results shown in Figure 5.8. The high impact of events shown in Satisfaction is Loss of freedom of speech / violation of human rights while under financial; fans violating local laws/prohibiting alcohol in stadiums is 57.11% .

Figure 6.0 shows Sensitivity of Performance on objectives

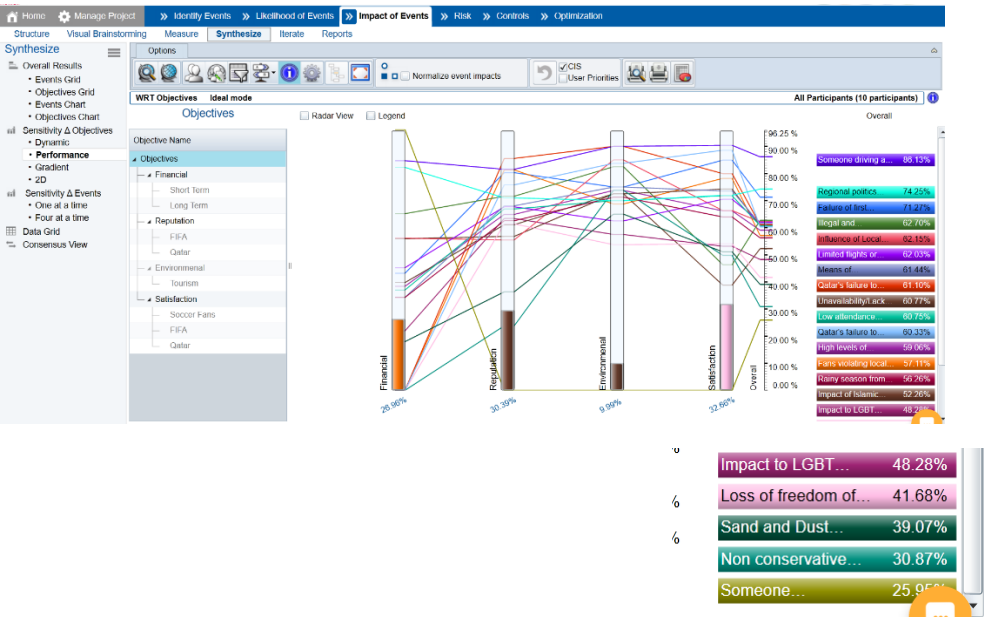
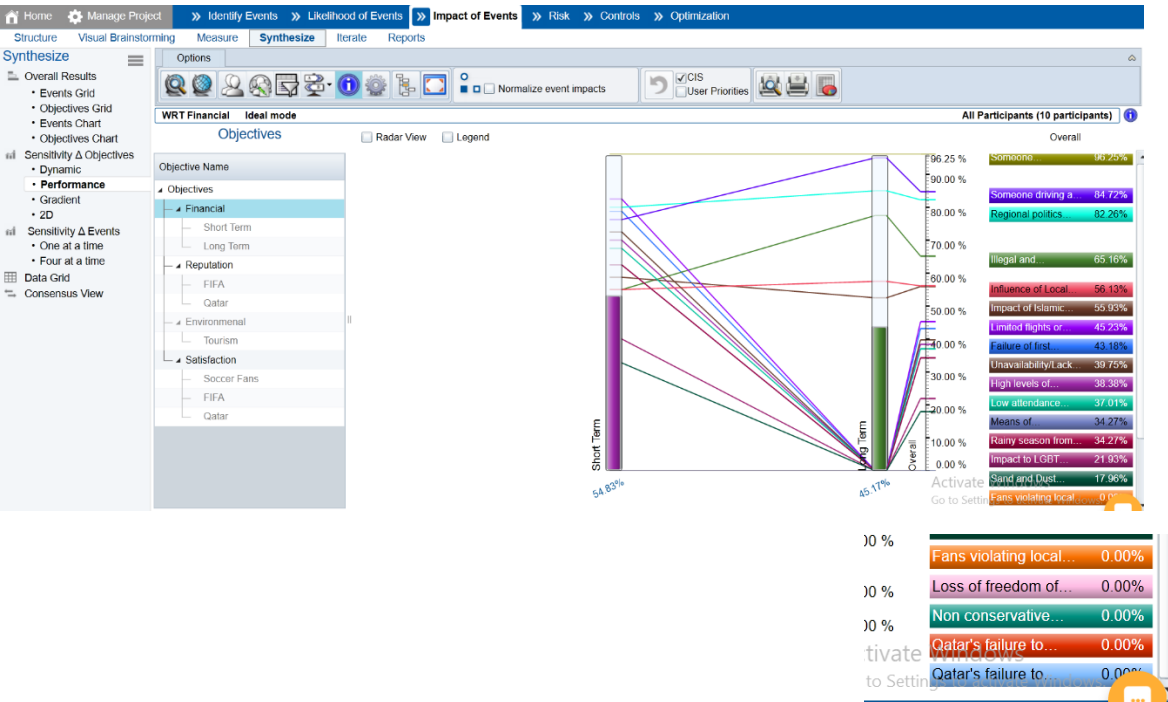


Figure 6.1 shows Performance sensitivity analysis on Financial objectives.



As shown in figure 6.1, someone driving truck a truck into the crowd has very 96.25% impact on both short term and long-term FIFA financial objectives.



Figure 6.2 shows Performance sensitivity analysis on Reputation objectives.

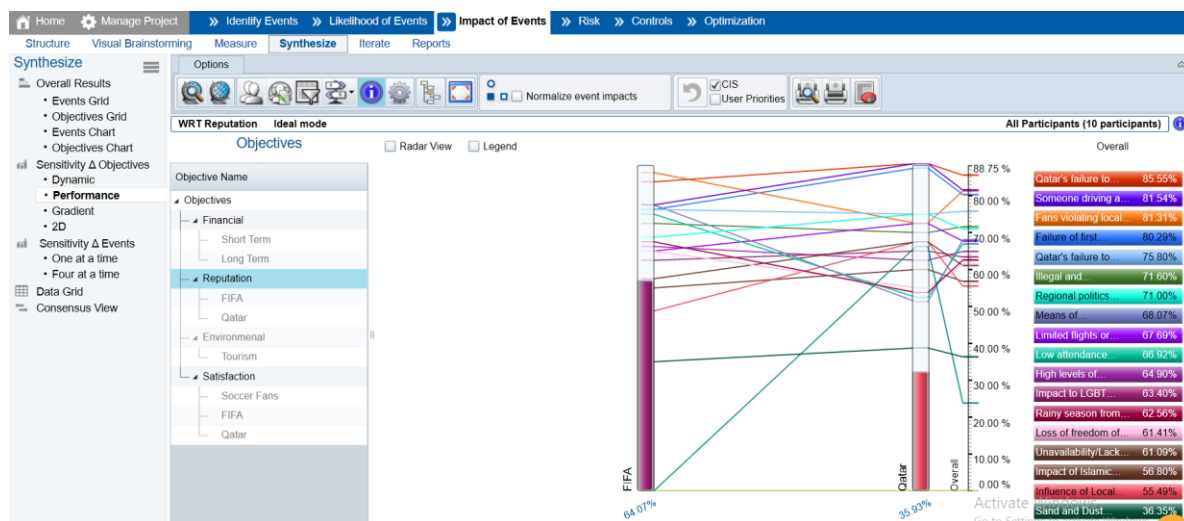
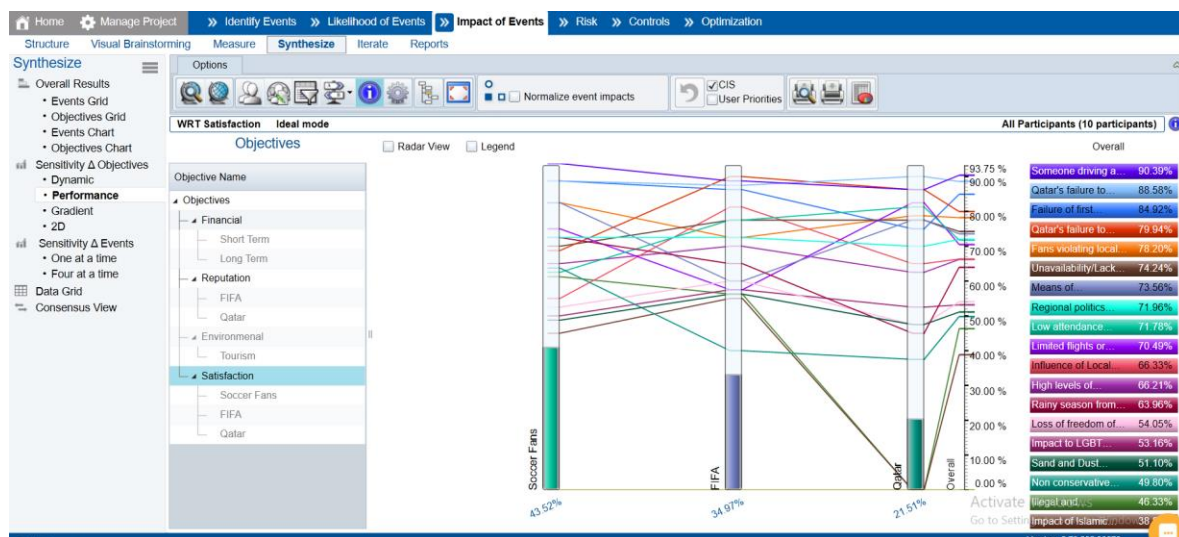


Figure 6.2, Qatar's failure to deliver will impact reputation of FIFA and Qatar average 85.55%.

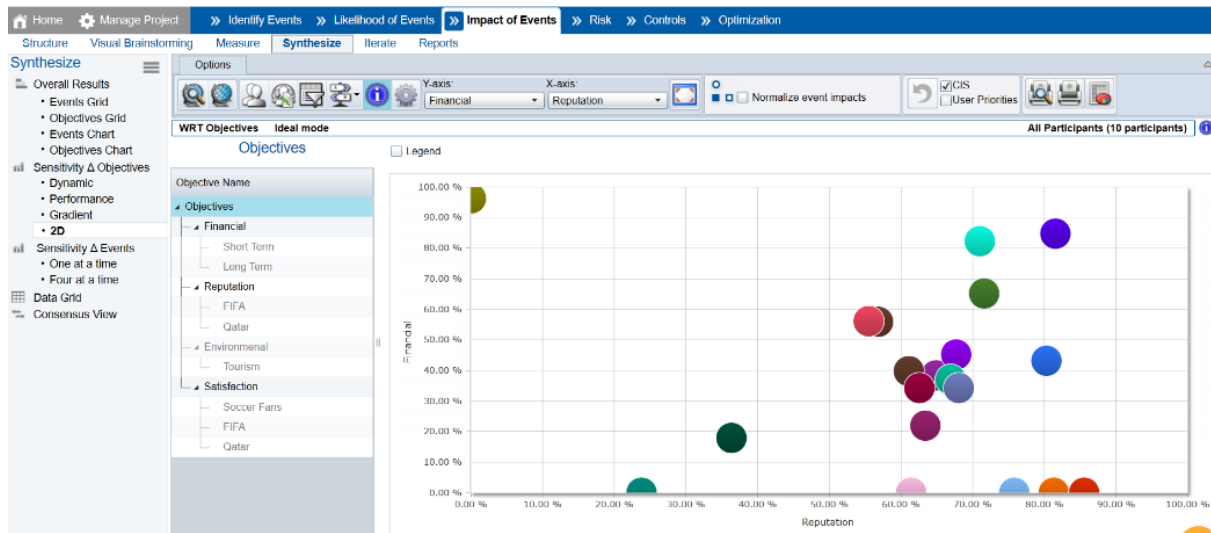
Figure 6.3 – Performance sensitivity on objectives (Satisfaction)



Someone driving truck into the crowd impacts satisfaction of soccer fans, FIFA and Qatar average 90.39%



Figure 6.4 – 2D Sensitivity of events



The 2D presents the case in a 2-dimensional view where the X-angle has the % rate for impact of events on reputation while the y-axis has the rate of events on financial. Figure 6.4 shows that Someone driving truck into the crowd impacts overall reputation (>80%) and financial objectives of FIFA (>80%).

Figure 6.5 - Sensitivity of events - Gradient

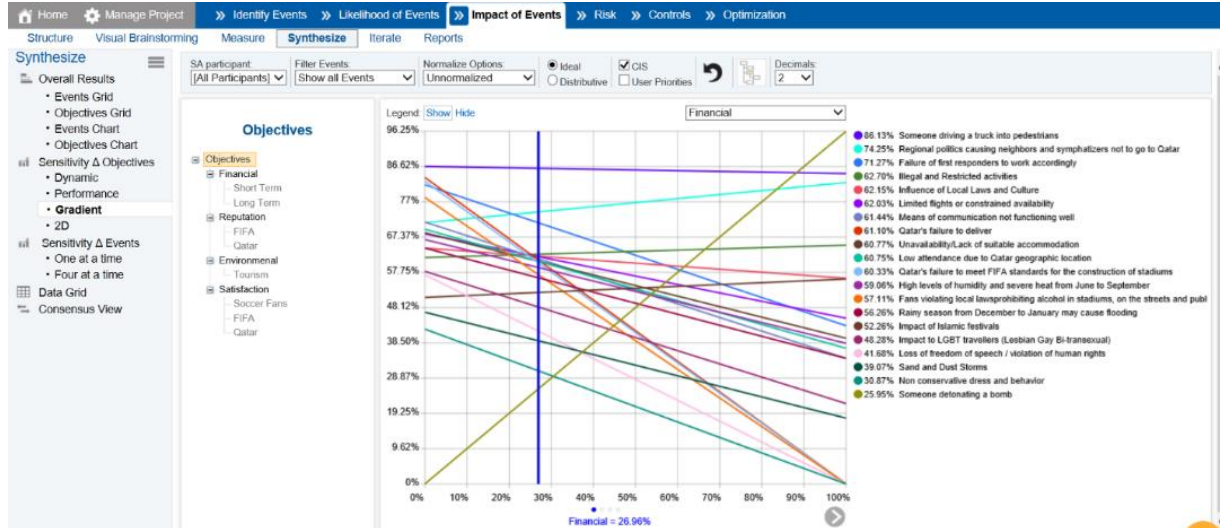


Figure 6.5 shows the gradient of impact of events on objectives.

Figure 6.6 – One at a time Sensitivity of events

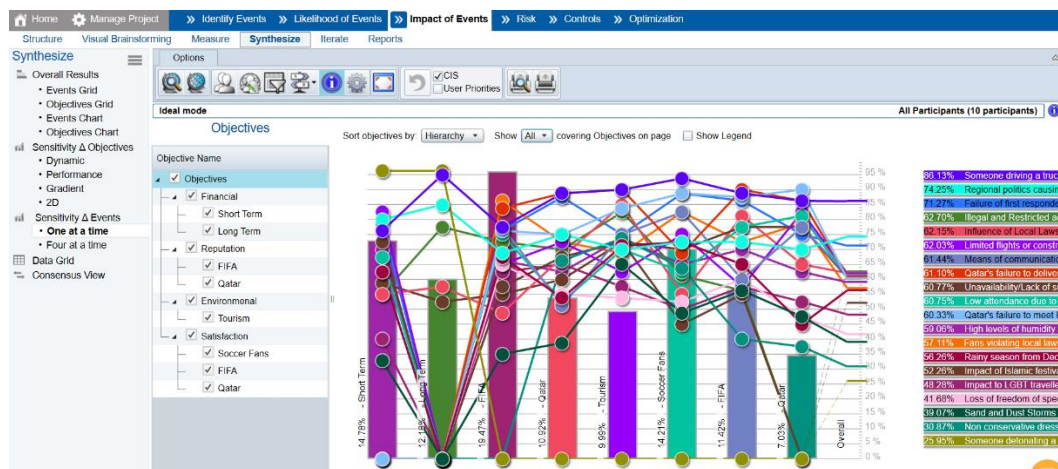
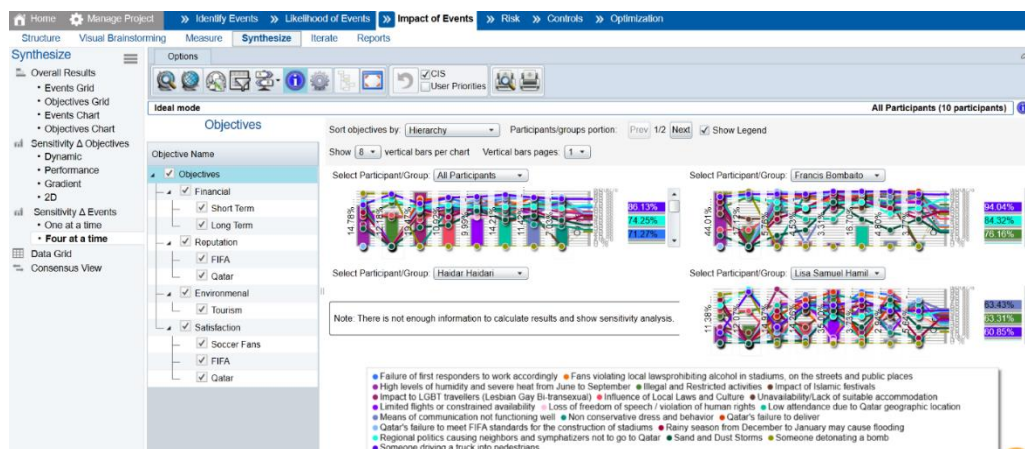


Figure 6.7 – Four at a time Sensitivity of events



## 7.0 Risk Analysis

Figure 7.1 - Impact of events on objectives Priorities

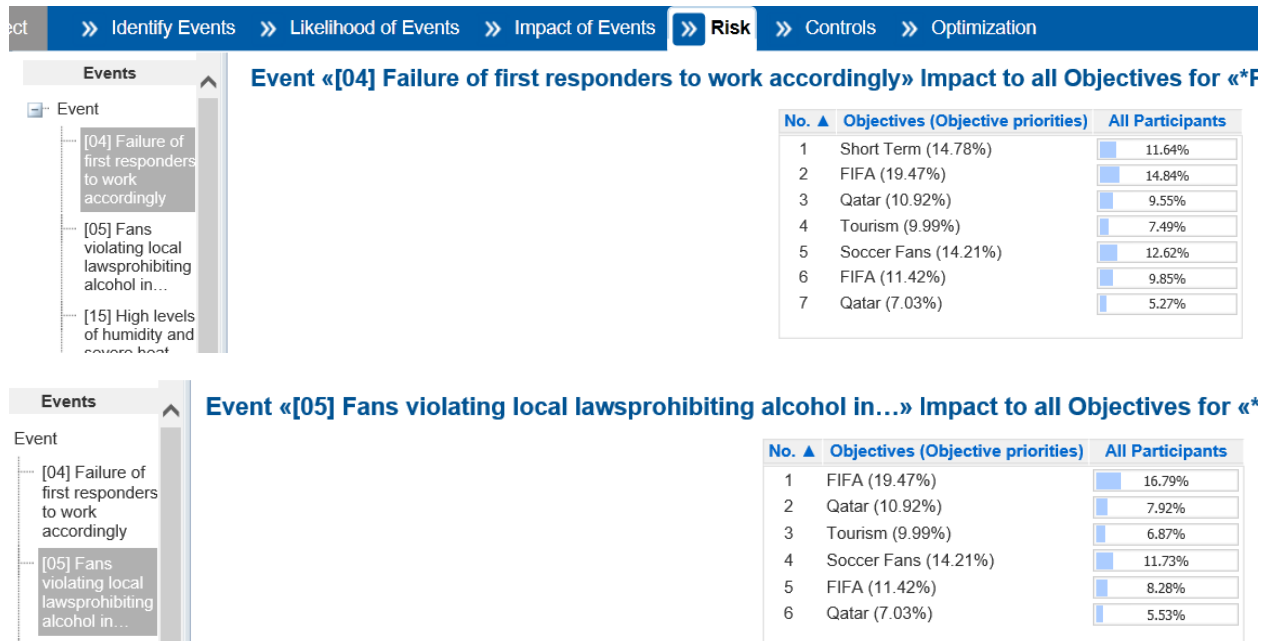
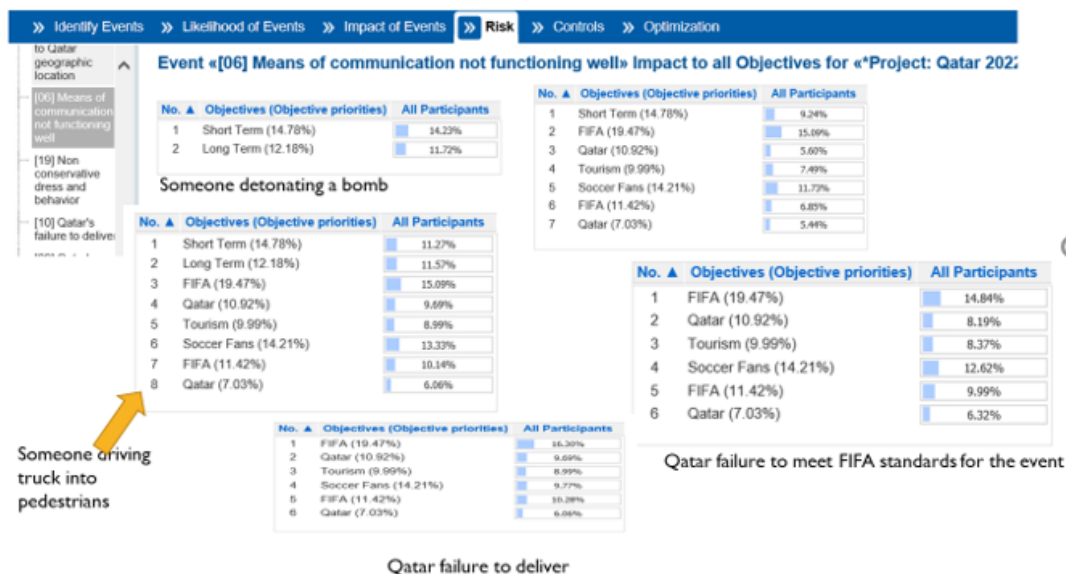


Figure 7.2 - Impact of events on objectives Priorities

# IMPACT OF EVENTS



## 7.1 Bow-tie - Overall

The Bowtie is a diagram that visualizes the risk in just one easy to understand picture. It is shaped like a bow-tie and shows the top event that could happen from various threats.

Figure 7.3

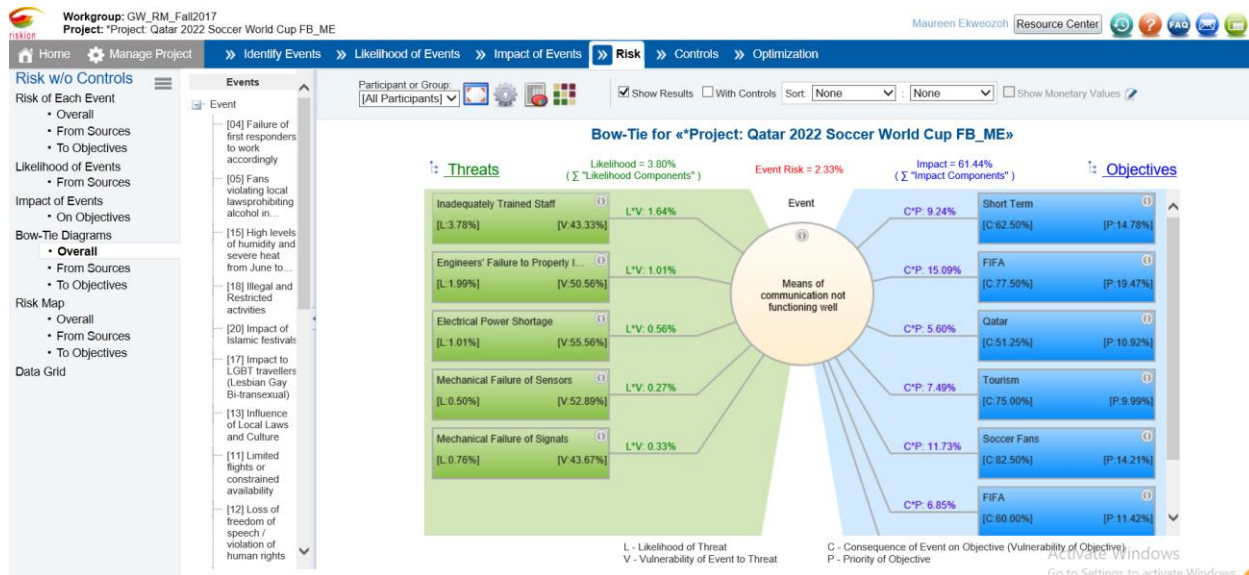


Figure 7.3 shows the top event as 'means of communication not functioning well' which may arise from the various threats on the left-hand side of the bow-tie namely inadequately trained staff, electrical power shortage, mechanical failure of sensors etc.

Figure7.4 - Bow-tie from sources

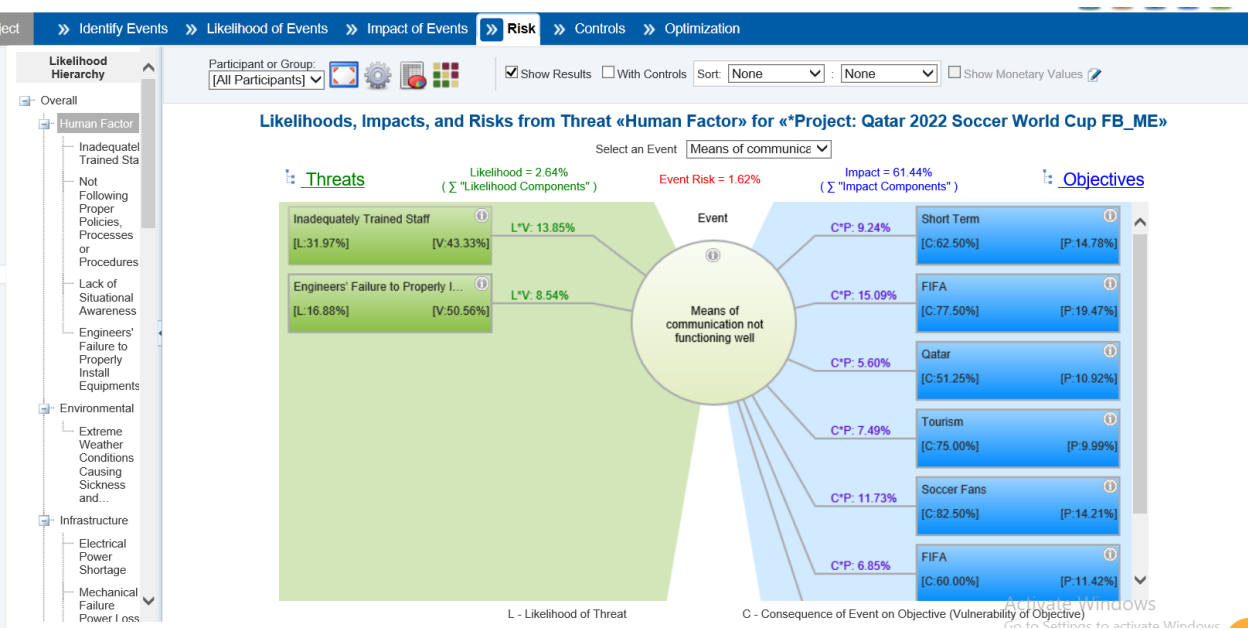


Figure 7.4 shows the top event from human sources to be ‘means of communication not functioning well’.

Figure 7.5 - Bow tie to objectives

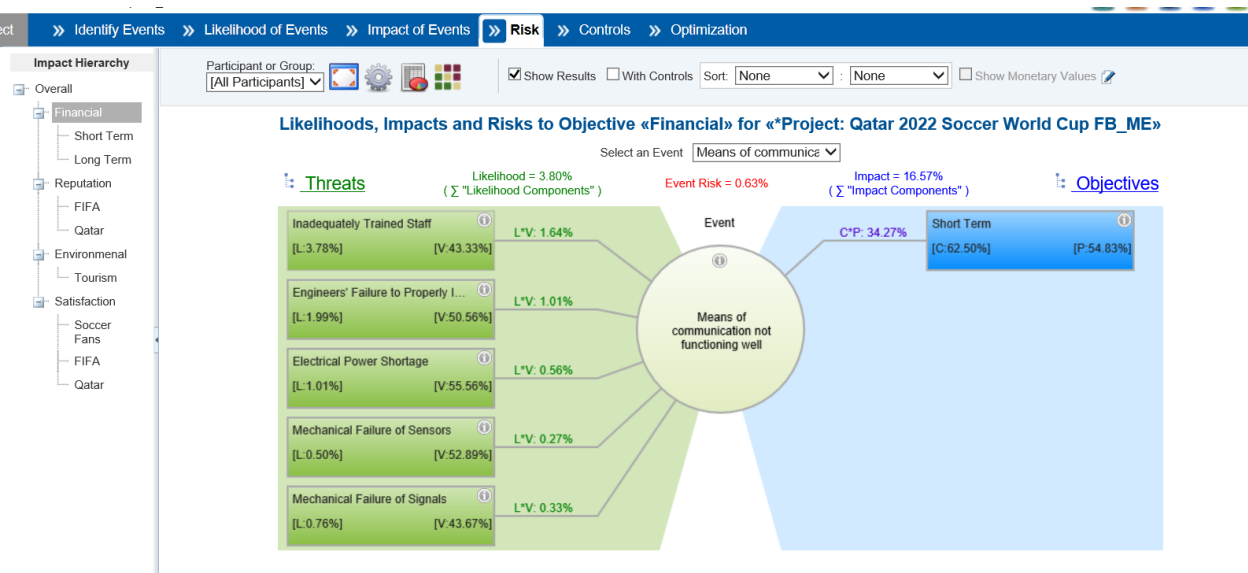


Figure 7.5 shows the top event from financial source to be ‘means of communication not functioning well’ derived from inadequately trained staff, electrical power shortage etc.

Figure 7.6 - Risk Map (Overall)

As initially defined, risk is the event that causes loss when it happens.

Hence Risk = Impact X Likelihood

From the overall risk map (figure 7.6), the risks within/(above) 15% and lie within the red segment of the risk map are:

1. Influence of local laws and culture (45.58%)
2. Impact of Islamic festivals (34.84%)
3. Regional politics causing neighbors and sympathizers not to go to Qatar (14.97%)

Figure 7.6 Risk Map - overall

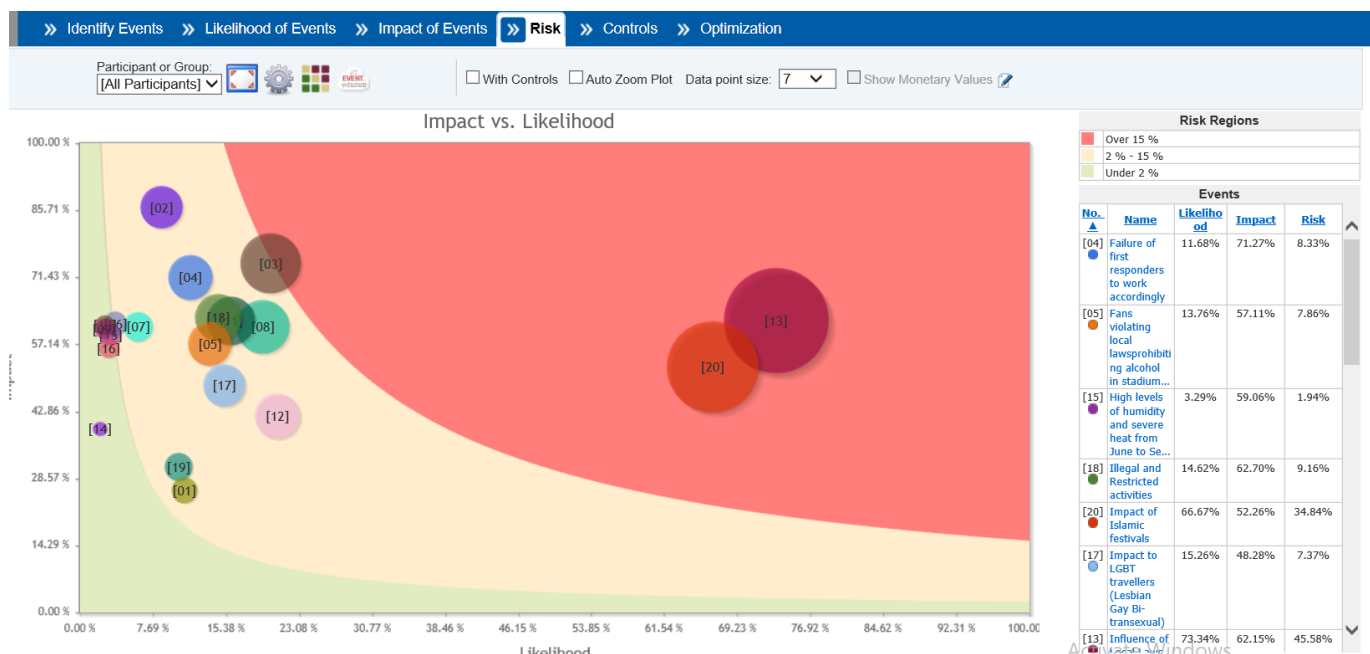
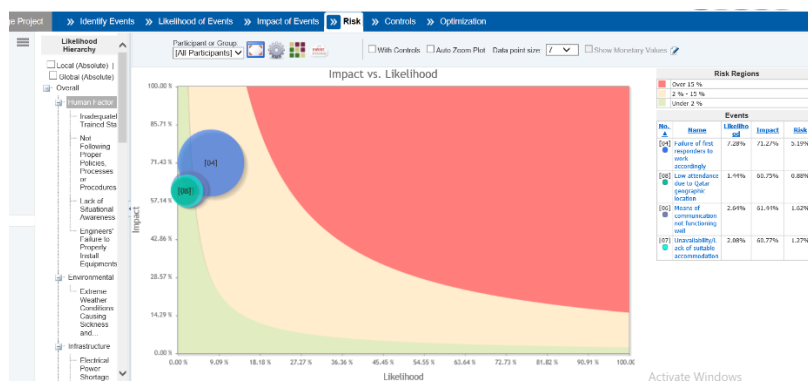


Figure 7.6 shows the overall risk map and is indicative of the risks to sources and risks to objectives (without control)

Figure 7.7 - Risk map on Sources

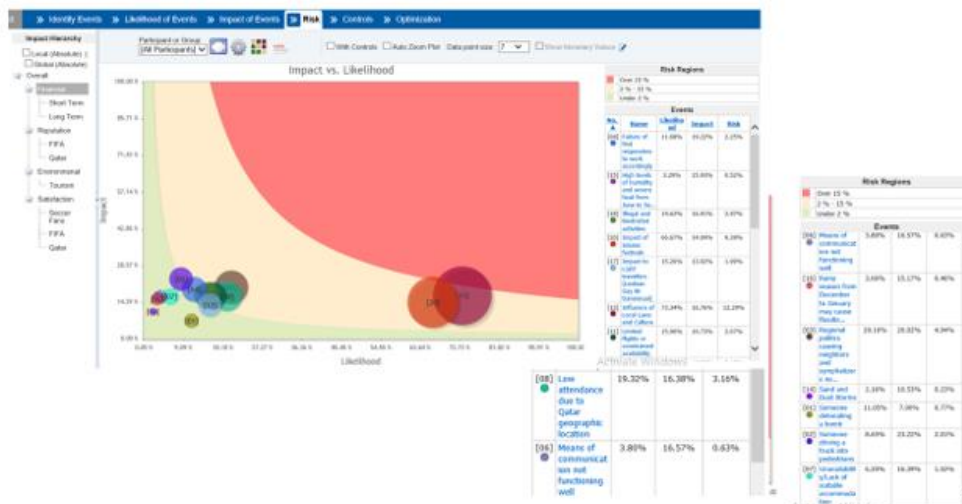


The risks shown in figure 7.7 lie below 15% risk region. This is risks that impact human factor.



Figure 7.8 - Risk Map - Objectives

## RISKMAP – OBJECTIVES



The risks shown in figure 7.8 lie interface between 3 - 15% risk region as concerns financial objectives

### 8.0 Iteration

The results shown in the risk map were not what we felt would be the risks that need mitigation measures. We expected that events that impact safety and security considerations would be the ones that would be significant in the risk map. This made us iterate the results and the risk map still had the same events as shown in figure xx as the top events that need mitigation measures. On closer look, we identified that the events that impact safety and security had low probability of occurrence, hence the risk map score less than 5%

Notwithstanding this result, the Management team in FIFA directed that mitigation measures also include considerations for events that impact safety and security measure as well as events that impact FIFA objectives on the short term.

After the presentation to management, the budget of \$3million dollars is assigned as budget and we were directed to develop various scenarios of mitigations measures for Management consideration.

## 9.0 Discussion

It is FIFA policy that risks above 15% be mitigated to as low as reasonably possible (ALARP) ideally below 30%. Within the risk map we have identified three sources of risks that are above 15% region.

They are namely:

1. Influence of local laws and culture (45.58%)
2. Impact of Islamic festivals (34.84%)
3. Regional politics causing neighbors and sympathizers not to go to Qatar (14.97%)

Clearly by FIFA categorization, these are high risks that need mitigation measures.

From the Bow-tie diagram illustrated in figure 7.3, the events that impact FIFA objectives on the short term include:

1. Inadequately trained staff
2. Engineer failure to properly operate the
3. Electrical power outage
4. Mechanical failure of sensors
5. Mechanical failure of signals

## 10.0 Control and Mitigation Measures

The mitigation measures for the risks were developed and their cost estimated. The commitment level is \$1.75million with a surplus of \$1.25mIn assigned as contingency. The pilot run for the project will be kicked off first so that feedback and learnings can be incorporated into the next stage of execution. Cost escalation is expected hence the assigned contingency sum.

Figure 10.2 shows the mitigation measures as well as the top events they will mitigate. Figure 10.1 shows the composition of the costs for the mitigation measures.



Figure 10.1

Index ▲	Selected ▼	Control Name ▼	Control for ▼	Cost ▼	Applications ▼	Categories ▼
1	<input checked="" type="checkbox"/>	Train and employ security operatives	Threat	300000	6	
2	<input checked="" type="checkbox"/>	Supply and install cameras around venues for FIFA 2022	Threat	400000	3	
3	<input checked="" type="checkbox"/>	For all equipment have 2+1 operating philosophy	Threat	100000	10	
4	<input checked="" type="checkbox"/>	Initiate Discussions with Qatar; Form Committee of FIFA and Qatar	Threat	500000	8	
5	<input checked="" type="checkbox"/>	Raise FIFA 2022 Awareness Global	Threat	300000	8	
6	<input checked="" type="checkbox"/>	Raise awareness for FIFA 2022 Qatar Incountry	Threat	150000	11	

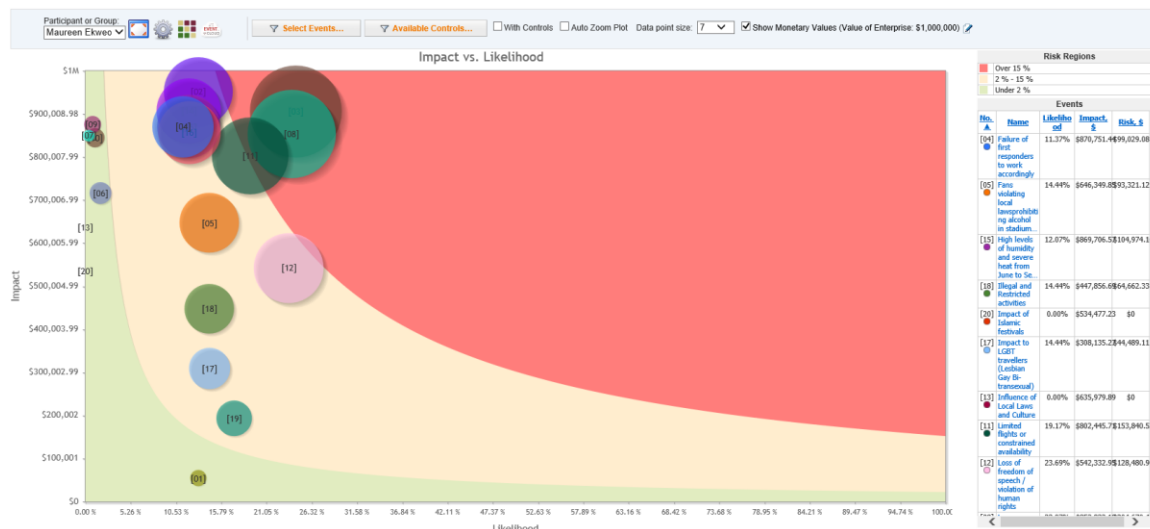
Figure 10.2

Threat Control	Risk Threat
For all equipment have 2+1 operating philosophy	Engineers' Failure to Properly Install Equipments
	Inadequately Trained Staff
	Electrical Power Shortage
	Mechanical Failure Power Loss
	Mechanical Failure of Sensors
	Mechanical Failure of Signals
	Mechanical Failure of Cables
	System Software Technology Obsolescence
	System Hardware Technology Obsolescence
	Intelligent Monitoring System Software Failure
Initiate Discussions with Qatar; Form Committee of FIFA and Qatar	Strained Relationship with Emirates and Kuwait Family
	Several Countries Have cut ties to Qatar and this has strained the national airline carrier
	Travel to Qatar is Curtailed
	Suspicion that Qatar sponsors Terrorist Organization including ISIS
	Reduced food Import from Saudi Arabia due to strained relationship
	More Expensive to import food from other countries
	Reduced value of local currency due to strained relationship
	Laws and Culture
	Suicide Bomber
	Attack by ISIS
Raise awareness for FIFA 2022 Qatar Incountry	Strained Relationship with Emirates and Kuwait Family
	Several Countries Have cut ties to Qatar and this has strained the national airline carrier
	Travel to Qatar is Curtailed
	Suspicion that Qatar sponsors Terrorist Organization including ISIS
	Reduced food Import from Saudi Arabia due to strained relationship
	More Expensive to import food from other countries
	Reduced value of local currency due to strained relationship
	Laws and Culture
	Suicide Bomber
	Attack by ISIS
Raise FIFA 2022 Awareness Global	Strained Relationship with Emirates and Kuwait Family
	Several Countries Have cut ties to Qatar and this has strained the national airline carrier
	Travel to Qatar is Curtailed
	Suspicion that Qatar sponsors Terrorist Organization including ISIS
	Reduced food Import from Saudi Arabia due to strained relationship
	More Expensive to import food from other countries
	Reduced value of local currency due to strained relationship
	Laws and Culture
	Suicide Bomber
	Attack by ISIS

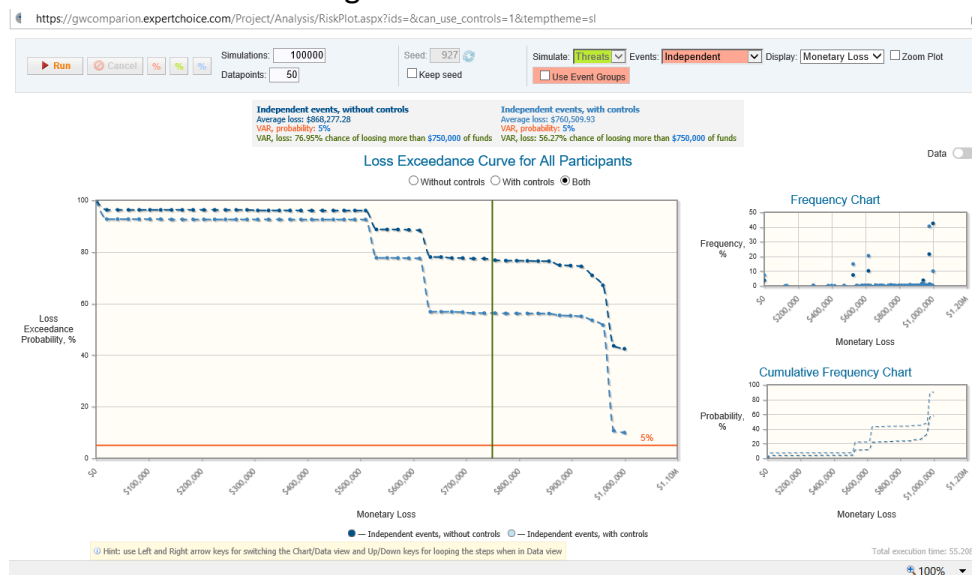
Supply and install cameras around venues for FIFA 2022	Suicide Bomber Attack by ISIS Attack on Infrastructure
Train and employ security operatives	Lack of Situational Awareness Suicide Bomber Attack by ISIS Attack on Infrastructure Cyber Attack on the Intelligent Event Monitoring Network Cyber Attack on the Telephony and Broadband Infrastructure
Train and employ security operatives	Attack by ISIS

It is expected that the application of these control measures will have a wider impact to reduce risks on both the sources and objectives. This is illustrated in figure 10.3. The variance between the risks without control and the risks with control is illustrated by the figures 7.6 and figure 10.3

Figure 10.3



The result obtained in figure 10.3 is also confirmed in effectiveness chart shown in figure 10.4



With risks there is the 77% probability of losing more than \$750,000 where loss is estimated as monetary whereas controls are applied, there is 56.27% chance of more than \$750,000 loss.

The optimization for expenditure or costs for risks mitigation occurs when controls are effected and this impact is felt up till the expense on the controls is spent; in this case over \$1.13mIn. The efficient frontier for budget is shown below in figure 10.5.

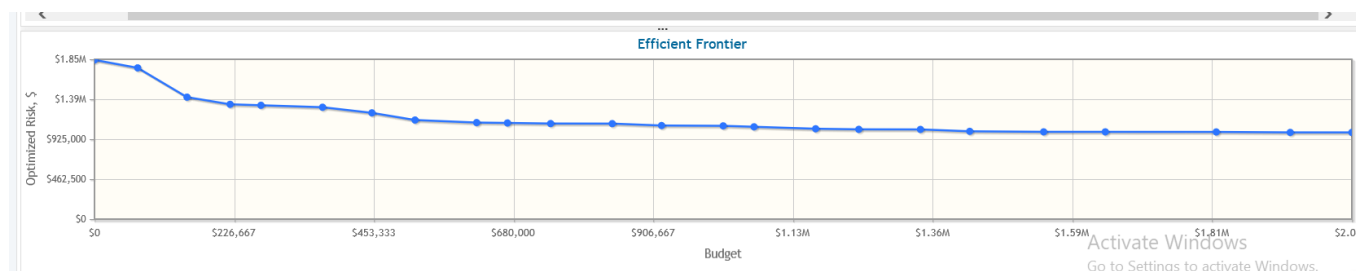


Figure 10.5

In line with FIFA Management directive, we developed three scenarios for the application of the control measures. The scenarios are follows:

Scenario	Estimate \$	Description
Base case	1,750,000	1,2,3,4,5,6
Mid case	105,000	3,4,5,6,
Low case	950,000	4,5,6

1	Train and employ security operatives
2	Supply and install cameras around venues for FIFA 2022
3	For all equipment have 2+1 operating philosophy
4	Initiate Discussions with Qatar; Form Committee of FIFA and Qatar
5	Raise FIFA 2022 Awareness Global
6	Raise awareness for FIFA 2022 Qatar Incountry

## 11.0 Conclusion

The management board of FIFA made the decision for base case scenario that incorporated all the mitigation measures for the risks above 15% and the top events risks that affect FIFA on the short-term.

The mitigation measures significantly reduced the risks range between 15% to 50% region to <30% and brought to top events that impact FIFA on short term to ~0%. This satisfies FIFA criteria.

It is however recommended the implementation of the mitigation measures be done by certified professionals and the requirements and objectives be communicated effectively. It is very important that Key Performance Indicators (KPIs) are used to manage all implementation aspects of the Risk mitigation. There should also be a continuous review of performance against plan and the effectiveness of the mitigation action(s).

## **References**

1. Forman, S. (n.d). Decision by objectives – How to convince other you are right, World Scientific
2. Expert Choice Software, (n.d.) Retrieved October 2017 from <http://gwcomparison.expertchoice.com> and <http://risk.expertchoice.com>