**Become a Chess Master at Managing Food Risk**  
By John Hnatio, Chief Science Officer, FoodQuestTQ  
   
When you think about it, the food supply is one of the most exposed of all industry verticals when it comes to risk. From fires and arson, explosions, natural disasters, workplace violence, food safety, cyber-threats, food fraud, equipment malfunction, industrial accidents, tampering and many others the list it seems goes on and on.  
  
With the above said, it’s pretty tough to run a food company these days. It’s a bit like navigating a minefield. Like a chess master you must be able to balance the cost of operations with just the right combination of prevention and response measures to keep losses low and profits high.  
In big food companies the job is made even tougher because large organizations like to create “stovepipes” around their critical activities.  While “stovepipes” can serve to create focus they can also impede effective communications. It’s hard to manage the portfolio of risks to your company when the left hand isn’t completely sure what the right hand is doing.  
  
It’s no easier for small and medium companies. Most small and medium food companies simply don’t have the resources to look at, let alone manage, the different risk factors they face.  If you’ve ever worked in a small food business, dealing with risk isn’t so much about managing it but more about putting out one fire first before you are forced to put out the next one.  
At FoodQuestTQ we’ve spent a lot of time thinking about ways to help food companies both large and small more effectively manage risk.  Our goal is to help food companies become chess masters at balancing the cost of their operations with just the right combination of prevention and response measures to keep losses low and profits high. At FoodQuestTQ we start by thinking about risk management holistically, as a portfolio of different risk factors that can result in untoward events.  We use the term all-hazards events to describe the portfolio of risk factors that can impact a food company.  
  
We think about all of the different risk factors, including food defense risk factors, in this way because all of the risks we face in the food industry are interconnected and interdependent. For example, you can never have a robust food defense program unless you already have an effective food safety program upon which to build it.  Likewise, any robust food safety program must contain elements of food defense.  We all know that fires can certainly affect food safety.  But arson is the number one cause of fires in the United States.  The result is that the very same investments we make to protect our facilities and equipment from industrial fires is also used to protect us from intentional arson.   
  
When we look across all of the different risk factors we deal with in the food industry we find that they are all interconnected and interdependent. This “interconnectedness” of risk factors means that the investments a food company makes in updating things like their HACCP plans should have appreciable value in strengthening their food defense plan.  Likewise, a food defense vulnerability assessment should have appreciable value in strengthening a company’s HACCP plan.  The evacuation drills we conduct to protect our workers from fire should also have value in protecting personnel from bomb threats and explosions and natural disasters and so on.  
At FoodQuestTQ we have found that significant cost efficiencies can be achieved by leveraging the “interconnectedness” among different risk reduction factors.  Just like the old adage goes, “Why pay for the same thing twice?”  This is why we take an all-hazards approach to food defense and food safety.  We help our clients look for ways to most effectively leverage their scarce resources to “kill as many birds as possible with a single stone” to reduce their costs and limit losses resulting from all hazards events.  We build our systems using computer-friendly software that allows our clients to perpetually monitor their operations to reduce the high costs they incur as a result of frequent, time consuming and expensive food assessments and audits.  
  
For food defense, we have identified the “core” categories of food defense interest that must be in place to prevent and respond to the full range of all hazards events that can affect a food company. Food Defense core categories of interest include food defense awareness and training, alarms, computers, communications and process control systems, physical security, access controls, and the other building blocks that must be in place to form the foundation upon which any robust food defense program must be built. Building on this foundation, we address six specific areas of food defense concern: 1) Preventing the Destruction and Sabotage of Critical Equipment and Facilities; 2) Protecting Facility Personnel; 3) Preventing the Intentional Poisoning of Food and Water; 4) Preparing for and Responding to All Hazards Events; 5) Responding to Food and Facility Emergencies, and; 6) Building a Continuity of Operations Plan.  
For the core categories of food defense interest and areas of concern we have looked across the seven U.S. Federal agencies with responsibility for all hazards events at food facilities including FDA and USDA, the seven principal global industry food safety schemas, Codex Alimentarius and the World Health Organization’s, Food Safety Challenges guidelines and we extracted all of the interconnected criteria that affect all hazards events including food defense.  
  
Then we asked multidisciplinary scientists and subject matter experts to tell us the significance of each criterion in addressing each one of the five elements on the all hazards events threat continuum. The first element of the threat continuum is deterrence. Deterrence means discouraging the human actions that can result in an all hazards event. The second element, detection means the discovery of an event before it happens. The third element, prevention means stopping the event before it happens. The fourth element, response means the immediate actions taken after an event has occurred. The fifth element, mitigation means the actions taken to ameliorate the consequences of the event.   
    
We have used these inputs to assign a statistical weighting to all of the criteria so that our computer software can automatically prioritize and rank order their relative values.  The average of the scores assigned to each of the five elements of the threat continuum is called aThreat Quotient or TQ score. Deterrence, detection and prevention values can be combined to produce a Preventionor P score.  Response and mitigation values can be combined to produce a Response or R score.  Our software uses TQ, R and P scores to identify those specific performance criteria that will give our clients the biggest bang for their food defense buck in preventing and, when necessary responding to all hazards events.  
By taking advantage of new technology advances, FoodQuestTQ can help you to become a food defense chess master who can effectively lower the cost of operations using just the right combination of prevention and response measures to keep your losses low and your profits high.  
  
FoodQuestTQ has a suite of software that uses the same patented technology advances described above to help the food industry manage the risks of doing business.  Our Food Defense ArchitectTM tool is designed to help companies of all sizes build robust food defense plans.  Our Food Safety ArchitectTM tool, premiering in March 2013, will help food companies build their food safety plans. Food MapperTM is a powerful search tool for quickly finding federal food regulations and agency directives, state food requirements and best food industry practices. Our FREE ToolTM (Food Response Emergency and Evaluation Tool) is an automated all-hazards food event command, control and response software platform for managing all hazards events tailored to meet the unique needs of food companies.  
  
We at FoodQuestTQ look forward to sharing our expertise with food companies.  With the holidays fast approaching, we hope that you can find a free moment to learn more about our cost-saving solutions to meet your food defense needs.  Please feel free to contact Bruce Becker at 540-645-1050 or write him at bbecker@foodquesttq.com to find out more. 