

Are my business risks really what I think they are?

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Introduction

We reap many benefits from the globalisation of food products. For one, our diets have grown more diverse now that we can buy foods that originate from all around the world. But there are downsides too. When you haven't grown or slaughtered your own dinner, you can't be sure how it was grown or where it's been. We have to rely on companies and government oversight to make sure what we're eating is safe and appropriately labelled.

Is food safer than it used to be? We say "Yes", because of:

- Better safety systems
- More knowledge of food safety risks
- Better analytical techniques
- Fewer, larger manufacturers and marketers with established systems
- Harmonisation of global food safety standards setting minimum standards
- Intervention by large retailers, who generally require more comprehensive practices than regulators

But there are new risks:

- High levels of international trade and complex supply chains
- Demand for "fresher" foods but with a long shelf-life
- Different standards, e.g. pesticides, allergens, in different countries
- More sensitive analytical techniques impacting on "not detected"
- Emerging pathogens
- Allergens and more affected people

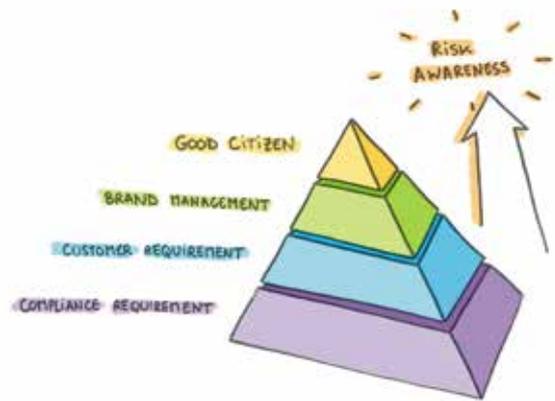
Social media has changed the game for all of us, as consumer and retailer reaction, information, and sometimes misinformation, is communicated widely and rapidly.

What is your organisation's risk appetite?

Companies can have different appetites for risk and kinds of risk. The risk appetite pyramid shows this well. Where you sit on the pyramid determines your risk appetite and approach to risk assessment and management. If you have a brand to protect, you will be more risk averse and focused on risk mitigation than if your aim is to simply provide food that complies with regulations.

Risk assessment and management systems are used as a tool to ensure that food is safe and suitable for consumption and to enable companies to manage their exposure in the face of uncertainty.

Are the traditional risk management systems up to the task? We look at a traditional system and compare the outcomes with two additional approaches, and follow through a recent case study: Hepatitis A virus in frozen, ready to eat berries.



The risk appetite pyramid

Traditional methodologies

Risk assessment methodologies typically classify hazards by likelihood and severity of the consequence in a series of steps.

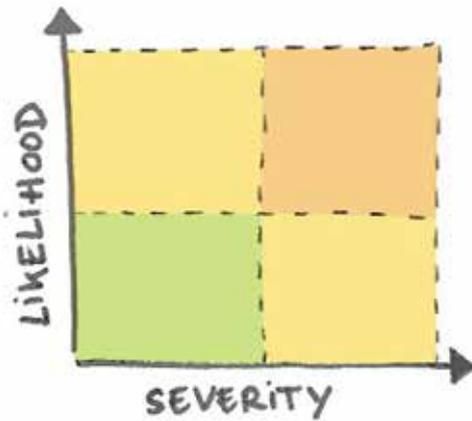
1. Potential hazards for the organisation are identified.
2. For each hazard the likelihood of it happening and the severity of the outcome are assessed and the hazard mapped in the matrix.
3. The hazards with highest likelihood and most severe consequences appear in the orange quadrant.
4. Mitigation actions are identified for these hazards, to result in a residual risk as appropriate.
5. This process is documented in a risk register.

For this process to be effective, both the likelihood and severity of the consequences need to be known. But what if we don't know these?

For example, who predicted the incidence of Hepatitis A virus in frozen ready to eat berries with the traditional methodology, and used this to identify interventions to result in hazard reduction?

Accenture Risk Management has developed a risk assessment tool that helps us to better consider the unknowns.

The Accenture tool uses a probability and outcome matrix that provides for uncertainty and unknowns. For example, while the probability of an earthquake or OSH incident is unknown, the outcome can be predicted and we can develop specific risk management plans even with the uncertainty. Similarly, the probability of an El Nino cycle used to be about every 7 years, so even if the outcomes were not predictable specific risk management plans could be prepared. However, as El Nino events become more frequent they may now be moving to both unknown probability and unknown outcome – but this still does not prevent the development of risk management plans, although they may become more difficult to justify in strictly economic terms.



A diagrammatic representation of a risk register

Traditional risk management methodologies fit in the Known/Known bottom left quadrant of this risk assessment matrix.

The intention is to have planned for specific major event types so that event management can occur following prepared and, in some cases, rehearsed plans. If there is not a specific plan the events are managed by general risk management and emergency plans, recognising that response times are likely to be longer and responses less planned than is possible for specific plans.

But, in spite of best intentions, hazards present themselves where both the probability and outcome are unknown – “Black Swans”. These are often recognised after the event. Once a “Black Swan” is identified or happens, how is it addressed by risk managers? There is a tendency to arbitrarily decide that the risk is now “known” and treat it as such, when in fact it remains unknown and may require a quite different risk management approach.

Was the Hepatitis A virus in frozen ready to eat berries a “Black Swan”? We think not.

Hepatitis A virus had been found once before in Australia in 2009 in dried tomatoes, which were probably imported. Hepatitis A virus can have serious health consequences and is not removed by normal processing (e.g. pasteurisation). In Australia, early in 2015 there was a spike in Hepatitis A virus in non-travellers, which was epidemiologically linked to Nanna’s Frozen Berries (imported from China). The importer, Patties Foods, arranged a test of around 100 samples – all of which were negative. Patties Foods withdrew the product. A CSIRO report examined the then state of knowledge for controlling food-borne viruses in horticulture products and made recommendations for preventing a similar outbreak from occurring.

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It concluded that there are no straightforward means for eliminating Hepatitis A virus on fresh produce and protection against viral contamination will rely on implementation and adherence to controls which prevent contamination. Ironically, the CSIRO report highlighted risk factors which suggested that transmission through a frozen berry product would be higher risk. This report included a statement that the “Hepatitis A virus is more resistant to inactivation on products with rougher surfaces – such as raspberries, blackberries and strawberries – than those with smooth surfaces.”

Could the New Zealand Food industry have been better informed and prepared? Did the lack of an estimate of likelihood, as required for standard risk management methodologies, limit the scope of the risk assessment?

Culture, values and hazard perception

A third risk assessment tool has been developed by Peter Sandman. Culture and values have a major impact on hazard perception. Where these are violated there is outrage and public concern. According to Peter Sandman: *Outrage drives hazard perception*. Outrage is fed by perceptions such as whether the perceived risk is coerced vs. voluntary, industrial vs. natural, from trustworthy vs. untrustworthy sources. This tool for risk assessment takes outrage into account and gives it as much importance as the traditional assessment of hazard particularly since

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TARGETING:

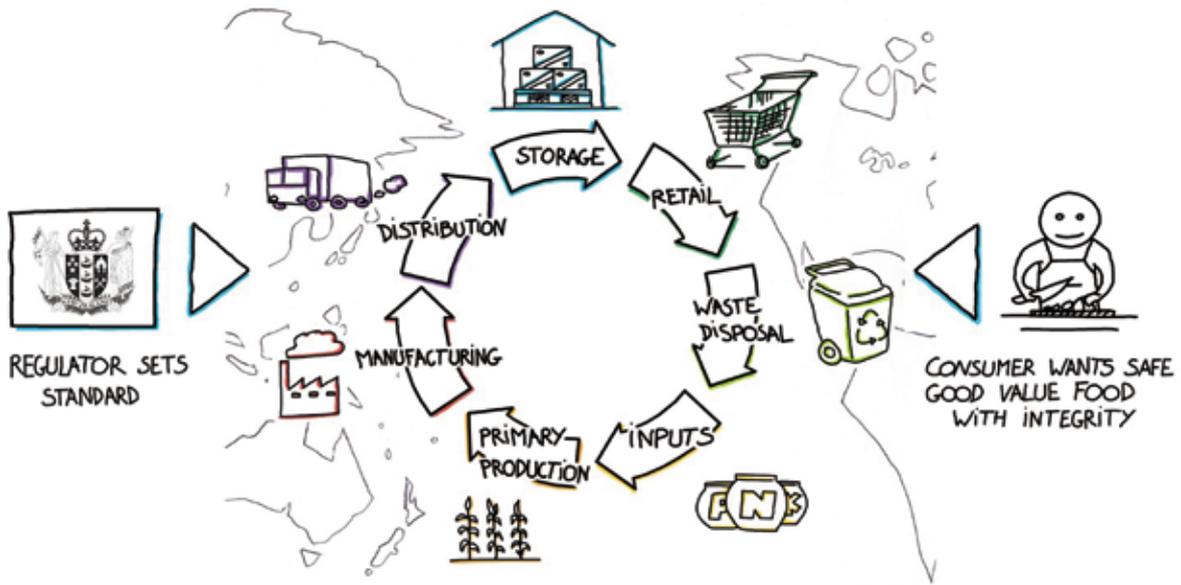
- > Protect critical equipment
- > Work hardened 300 Series Stainless Steel fines
- > 400 Series Stainless Steel
- > Contamination that evades metal detection and x-ray
- > Contamination from rotary valves, augers, screws, sifter screens, blowers, fans, ingredients etc
- > Reduced metal detector trips
- > Eliminate recalls



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A product life cycle approach as a useful framework to identify potential risks and reduce the occurrence of 'black swans' and high outrage events



Culture and values have a major impact on hazard perception. Where these are violated there is outrage and public concern

social media provides a major platform for the expression of outrage. Issues with a high outrage potential require active communication and management, regardless of the actual level of hazard. Where outrage is low, even though the perceived hazard may be significant, standard risk management communication can be used. In this tool Risk = outrage + hazard.

What level of outrage and hazard perception has the occurrence of Hepatitis A virus in our food generated? In Australia, product recalls were carried out in February 2015. The Australian public reacted by avoiding the product lines, and by the end of the year Patties profit was down by 88%, and they had sold their frozen berry business. In New Zealand product recalls occurred in early December 2015, about 6 weeks after putative Hepatitis A cases were first reported. MPI has recognised the risk of death or serious harm and issued an Emergency Food Standard for imported frozen berry fruits, which specifies a testing regime for *E. coli* for all imported unprocessed frozen berries. By Sandman's analysis this issue in New Zealand has high perceived hazard and outrage potential and it appears that appropriate crisis communication has occurred. However, many instances of

outrage have no apparent link to food safety but involve social and environmental concerns within the food system.

Learning from failures of food systems

Every year there are 50-100 public food recalls in Australia and New Zealand. Presumably each one was due to a serious hazard. Yet most people struggle to remember many of these. Why? Perhaps there was a low level of outrage, with government and industry being seen to be doing the right thing.

Yet there are some very memorable failures of food systems. Some were economic fraud, such as substitution of beef with horse or kangaroo meat and dairy protein with melamine. Others were technical error such as the incorrect identification of *Clostridium botulinum* in infant formula or labelling errors such as the non-declaration of dairy ingredients in coconut products (36% of all recalls in Australia in 2015). And some were based on affronts to values, such as the use of slave labour in fishing, and non-sustainable palm oil in confectionary. Were these failures predictable, or "Black Swans"?

Life cycle approach

The product life cycle approach recognises the complex food system we have where companies manage their business between the regulator and the consumer to produce safe, good value food with integrity. In this complex system an adverse event anywhere in the product life cycle can have a large ripple effect. We recommend a product life cycle approach as a useful framework to identify potential risks and reduce the occurrence of "Black Swans" and high outrage events.

So what should you do?

1. Have a broader approach to risk assessment. Look across the product life cycle and take into account uncertain and unknown risks using a tool such as Accentures.
2. Take into account culture, values and outrage in your risk assessment. Have good risk communication plans prepared.
3. We have a complex global food system, so keep up with what is going on so that you are not caught up in it!