

An (almost) Layman's Approach to Risk

Bob Kirby

ITW Envopak

Today's Presentation

Part I (Why)

- Risk or Probability
- Blame
- Cause & Effect
- Perception is Very Important
- Disproportionate Impact

Part II (How)

- Study of Flows
- Open & Closed Systems
- Core Skills

Part I

"I would not say that the future is necessarily less predictable than the past. I think the past was not predictable when it started."

Risk or Probability

Risk

- **Worry**
 - Death
 - Injury
 - Loss
- **Blame**
- **Avoidance**

Probability

- **Curious**
- **Neutral**
- **Prevention**
- **Information**
 - Anything
 - Winning
 - Losing
 - Death
 - Injury
 - Loss
- **Avoidance**

Probability?



- **Death!**
 - 100%
 - Useless information
- **When**
 - 100 years old
 - » 9,000: 2007 (0.015%)
 - » 40,000: 2031(0.062%)
 - » 413% improvement in your chances!
 - 1 year old
 - » UK 0.5%, E 0.43%, F 0.42%, D 0.41%
 - » Being born is relatively dangerous?
- **Where**
 - Location
 - » Angola 18.4%, Mozambique 11.0%
 - » This is really dangerous

Cars

- Spain 0.118%
- France 0.0867%
- Germany 0.0709%
- UK 0.0534%

Mad Cow Disease

- 200 people diagnosed worldwide
- 164 UK
- 0.00027%
 - 10-15% inherited
 - Mostly “sporadic”
 - “small %” from meat

Being born is 10x more Dangerous than Driving a Car

And 1852x more Dangerous than Eating Meat

- **People, Media, Bosses**
 - Don't Like uncertainty or Greyness
- **That's Why Risk is Relative**
 - Doubles
 - Triples
 - Leaps
 - "Unacceptable"
- **Perception: not Accuracy often Drives**

Worry & Fear of the Unknown is the Driver of Action

Part II

"Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know."

Donald Rumsfeld US Secretary of Defense

Being Accurate is not Always Being Helpful!

Broadly in designing a Product or System the key issues are minimisation of risk (probability) of:

- **Loss**
- **Theft**
- **Injury**

This should be supplemented by ease of use and flexibility.

- **Management by Exception**
- **Audit Trails**
- **Track & Trace**

- **Products Tracked Individually**
- **System must react to differences and variances**
- **Differences and variances must be Logged**

Flows leading to Actions

- **Study of Flows:**
 - People
 - Goods
 - Services
- **Identification of Unusual Occurrences**
- **Reacting to anything:**
 - Different
 - Unexpected
 - Not Normal

Management by Exception; Driven by Risk Perception

- **Public or Customer are all “Exceptions”**
- **As individuals occurring only “Once”**
- **Random & Difficult to Predict and Control**

We are all Part of an Open System

- **Penetration of Open Systems easier than Closed**
- **Minimise by Categorising Public/Customers according to:**
 - » **Potential Risk**
 - » **Previous Incidents**
 - » **Relevant Data**

- **Crew, Technical Staff, Employees**
- **People Appearing & Registering Everyday**
- **Repeating & Easier to Predict Control**

- **Penetration of Closed Systems More Difficult than Open**
- **CIT Companies have highly developed Closed Control Systems**
- **Successful Penetration of Closed systems must be frequent:**
 - » **Usually occur on more than one instance**
 - » **On more than one day**

- **At Interface of Open & Closed Systems**
- **Security System**
- **Screening Looking for Variances:**
 - Public Areas
 - Higher Risk Areas
 - » Threats
 - » Valuables (Increased Theft Risk)
- **Closed Systems Vulnerable to Sudden “Shocks”**
 - » Tighter Hand Luggage Restrictions
 - » Massive Load on Hold Luggage Systems

Companies must become specialised in:

- **Audit Trails**
- **Deterrence**
- **Tamper evidence**
- **Security**

Tracking “Openings”

- **Every Movement from A to B must become Unique**
- **Every Package Opening must be Unique**
- **Every Door Opening must be Unique**
- **All receiving a Unique Number**
- **Giving access to its life history**
- **Stored until it might just be necessary**

Everything and Everybody is being Tracked & Logged!

Presentation Summary



- **What Drives the Perception of Risk**
- **How Might this be interpreted**
- **Systems and Products are Evolving to the Exceptions**
- **You, or it, Might just be that Exception**
- **You never know when we might need data about that one Event!**

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