

# The fight against economically motivated violations of food law

Real world examples and strategies to combat food fraud

An enforcement perspective

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Rome Oct 2014  
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Hampshire Scientific Service



## Areas discussed

1. Can we learn from History?
2. The crooks already know what we will find out?
  - a. Dietetic foods and quasi medicines
3. Combatting Fraud - The fight begins
  - a. From hindsight to insight
  - b. Intelligence continuum.
  - c. Focussed intelligence
4. The next problem area?

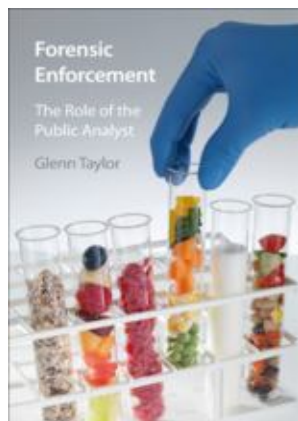


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# 1. Can we learn from history?

## 1860 London: Food Safety Act



Little girl: "If you please, Sir, Mother says, will you let her have a quarter of a pound of your best tea to kill the rats with, and a ounce of chocolate as would get rid of the black beetles"

Punch 14 August 1855



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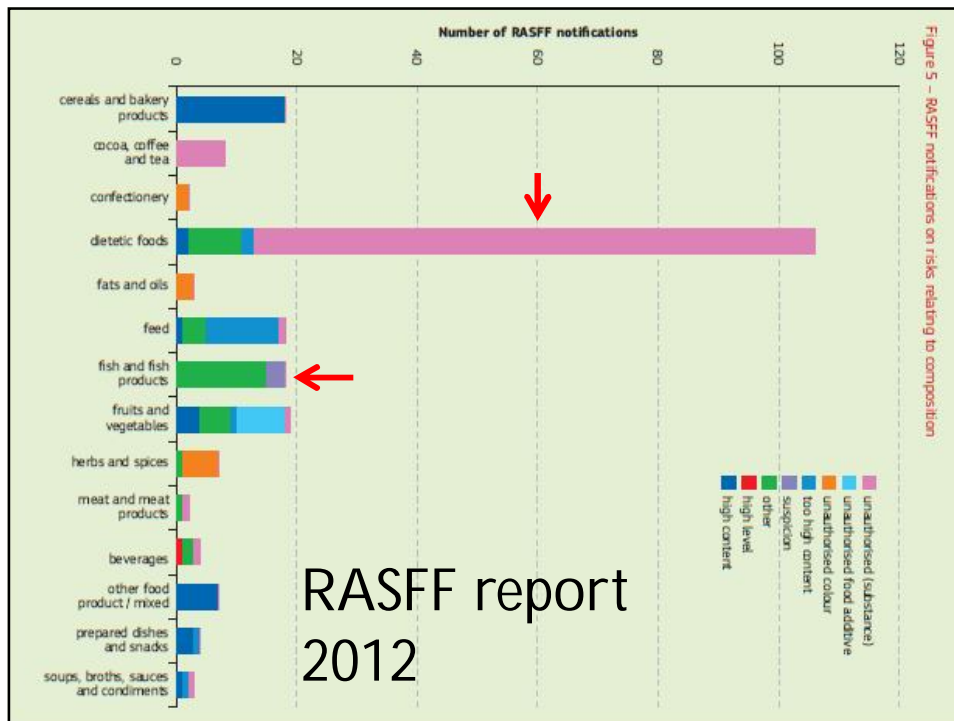
Red cheese	Coloured with red lead ( $Pb_3O_4$ ) and vermilion (mercuric sulphide, $Hg_2O$ )
Confectionery	White comfits often included Cornish clay Red sweets were coloured with vermilion and red lead Green sweets often contained copper salts (eg verdigris: basic copper acetate) and Scheele's (acidic copper arsenite) or emerald green (copper arsenite)
Olive oil	Often contained lead from the presses
Vinegar	'Sharpened' with sulphuric acid; often contained tin and lead dissolved when boiled in pewter vessels
Custard powders	Wheat, potato and rice flour, Lead chromate, turmeric to enhance the yellow colour
Coffee	Chicory, roasted wheat, rye and potato flour, roasted beans, acorns etc, burnt sugar (black jack) as a darkener
Tea	Used tea leaves, dried leaves of other plants, starch, sand china clay, French chalk, Plumbago, gum, indigo, Prussian blue for black tea, turmeric, chinese yellow, copper salts for green tea
Cocoa and chocolate	Arrowroot, wheat, Indian corn, sago, potato, tapioca flour, chicory Venetian red, red ochre, iron compounds
Cayenne pepper	Ground rice, mustard seed husks, sawdust, salt, Red lead, vermilion, Venetian red, turmeric
Pickles	Copper salts for greening
Gin	Water Cayenne, cassia, cinnamon, sugar, alum, salt of tartar (potassium tartrate)
Porter & stout	Water, Brown sugar, Cocculus indicus, copperas, salt, capsicum, ginger, wormwood, coriander and caraway seeds, liquorice, honey, Nux vomica, cream of tartar, hartshorn shavings, treacle



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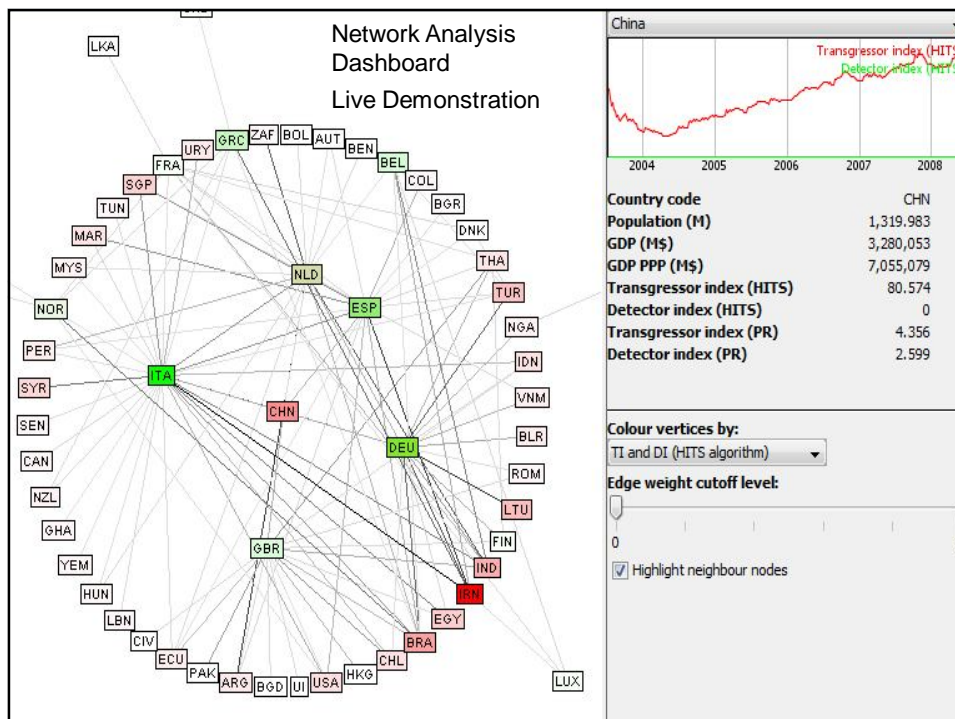
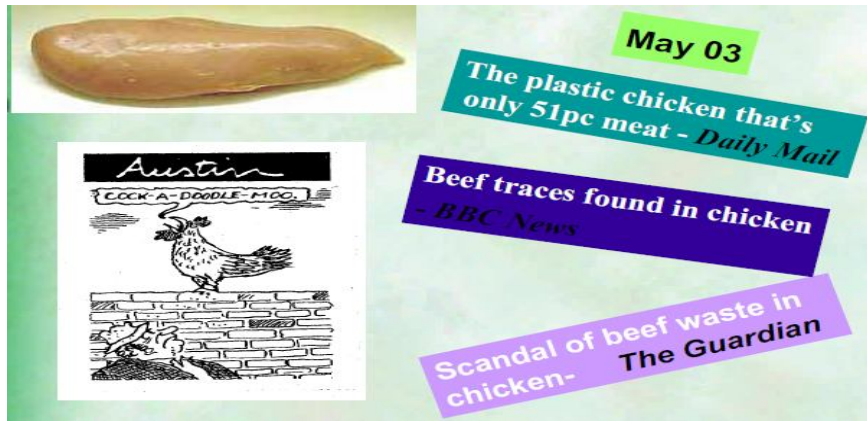
Adulterants identified by Accum (1820) and Hassall (1850)

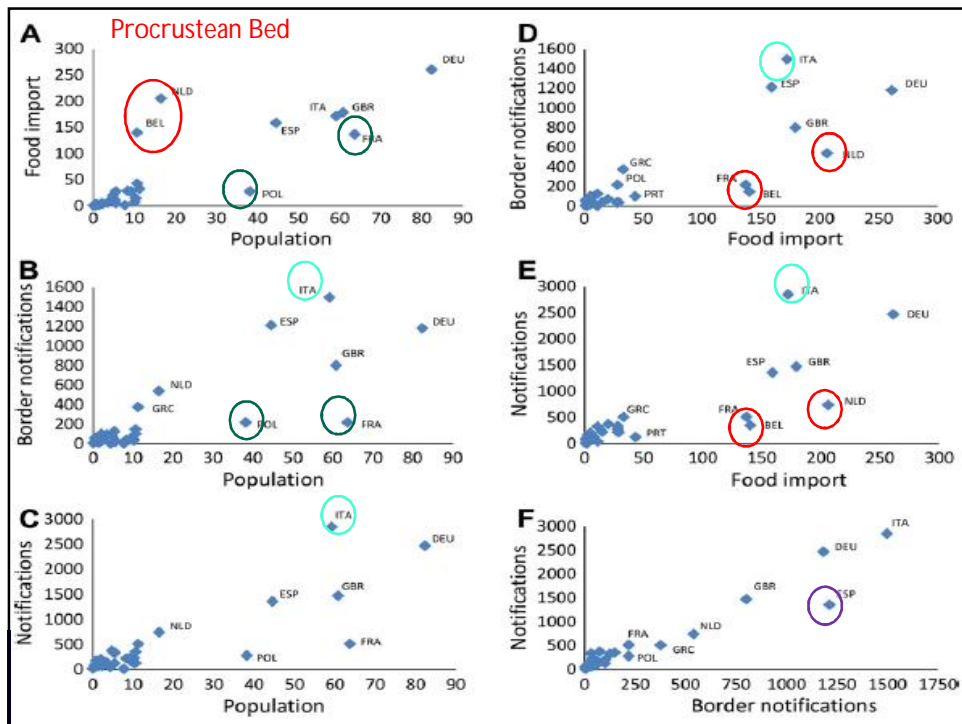
<http://www.rsc.org/education/eic/issues/2005mar/thefightagainstfoodadulteration.asp>



2. Do the crooks already know what we are about to find out?

# £200Million chicken fraud

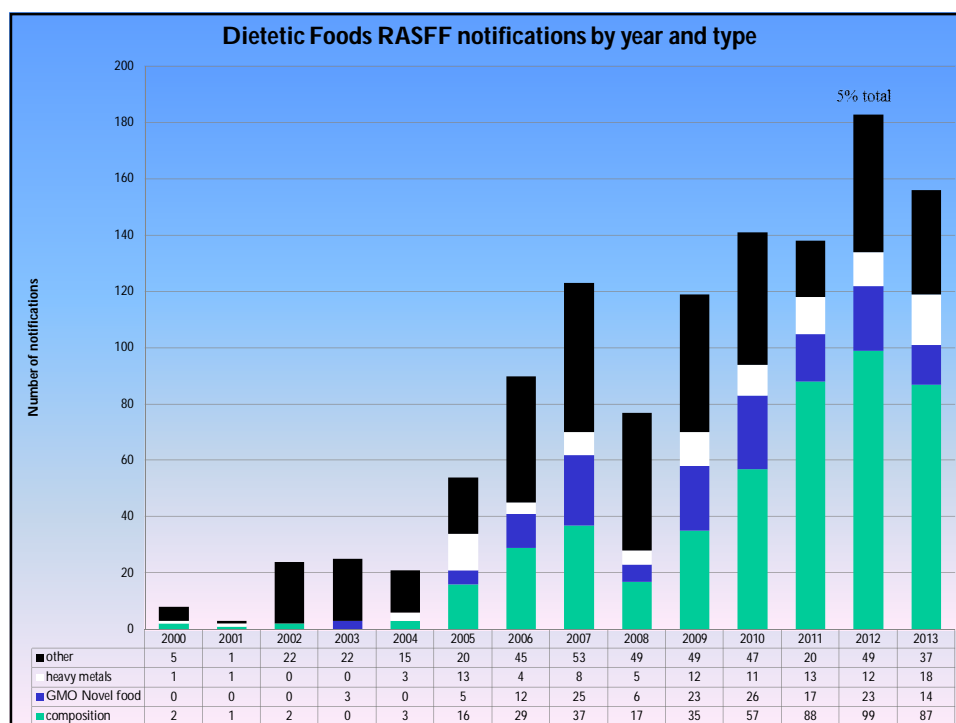
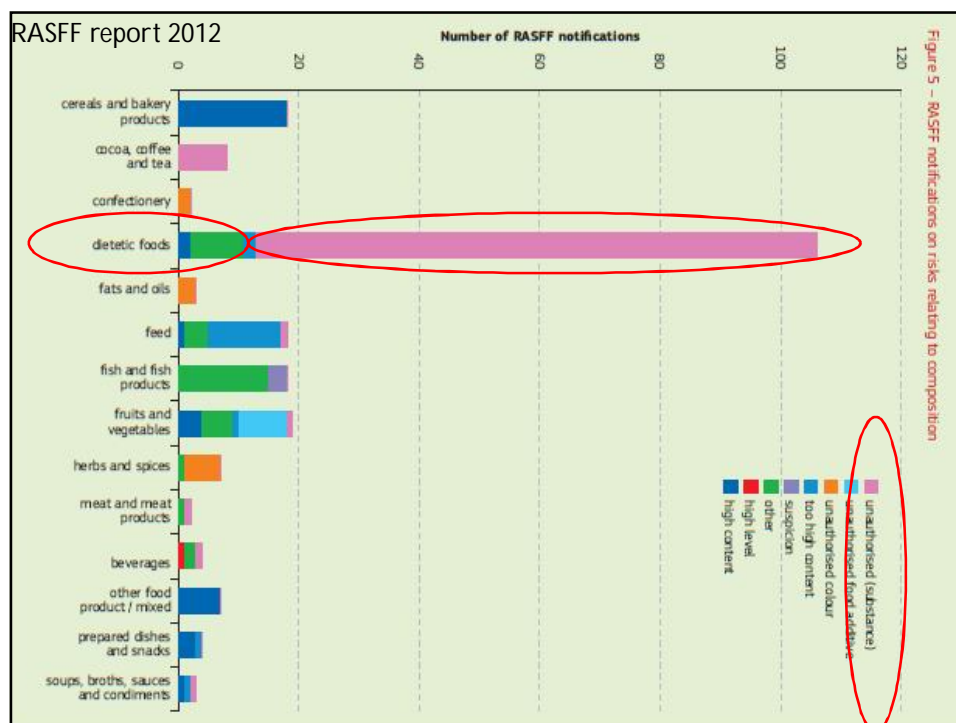




2a. Dietetic foods, the internet and the difficulty in regulating and the need for a new approach

A particular area of concern for me.....

## RASFF report 2012





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30 January 2013 Last updated at 16:51

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Claire Squires inquest: DMAA was factor in marathon runner's death




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Banned slimming drug kills medical student: Coroner attacks online dealers who target the vulnerable

Sarah Houston took DNP, an industrial chemical popular with bodybuilders

Had complained of temperature and breathlessness on night before death

Had been seeing psychiatrist for past three years to help battle bulimia

Was taking weight-loss drug secretly in conjunction with anti-depressants

Coroner: 'Not a one-off case and needs bringing to the public's attention'

Family say they plan campaign to raise awareness of drug

By CHRIS BROOKE

PUBLISHED: 16:09, 22 April 2013 | UPDATED: 09:53, 23 April 2013

She was a healthy medical student whose parents, brother and sister were all doctors.

But – obsessed with her weight – Sarah Houston, 23, was secretly taking a banned and dangerous slimming pill.

And just when she told her psychiatrist her bulimia was finally under control, the drug, which is linked to 62 deaths worldwide, claimed her life too.

Although banned for human consumption, DNP is easily available online – in capsule form – because it is also a pesticide.

At her inquest yesterday, coroner David Hinchliff said it was 'entirely' responsible for Miss Houston's death.

Demanding a crackdown on the sale of the capsules, he said manufacturers knew they were bought for weight control.

'The only motive for manufacturing a toxic substance as a slimming aid would be to profit from people who have the misfortune of having a condition such as Sarah's,' he said.

'Anyone who professionally manufactures capsules to be taken as a drug has the intention of people using it as a drug. Sarah's death is a consequence of that.'

## Post Mortem Results

Blood: Mitragynine, N- $\alpha$ -diethylphenethylamine and  $\alpha$ -ethylphenethylamine.

### Quantitative Confirmation

Method	Analyte		Blood	Preserved Blood	Urine
(1)	Alcohol	mg/100mL	---	<10	<10
(7)	Citalopram	mg/L	---	0.32	---
(7)	Lamotrigine	mg/L	---	1.9	---
(7)	Propranolol	mg/L	---	1.1	---
(7)	Bupropion	mg/L	---	0.018	---
(7)	Mitragynine	mg/L	1.6	---	---
(7)	7-hydroxymitragynine	mg/L	0.19	---	---
(HPL)	N- $\alpha$ -diethylphenethylamine	mg/L	---	~ 0.05	---
(HPL)	$\alpha$ -ethylphenethylamine	mg/L	---	~ 0.06	---
(9)	$\gamma$ -Hydroxybutyrate (BHB)	mg/L	---	99	---



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## Post Mortem Results - conclusions

- The mitragynine concentration determined in the blood (1.6mg/L) is above that measured in a previously reported fatality associated with 'Kratom' use. The effect of the blood 7-hydroxymitragynine concentration (0.19mg/L) is unknown, but this compound is reported to be more active than morphine. It is likely that the combined levels of mitragynine and 7-hydroxymitragynine contributed to this fatality.
- Due to the lack of available information relating to N,a-DEPEA and AEPEA, the combined effect of the two stimulants together is impossible to accurately estimate. It would be surprising, but not impossible that the combined effect could cause a fatality.



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- FDA has seen an increase in the number of shipments of dietary supplements and bulk dietary ingredients that are, or contain kratom, also known as *Mitragyna speciosa*, mitragynine extract, biak-biak, cratom, gratom, ithang, kakuam, katawn, kedemba, ketum, krathom, krton, mambog, madat, Maeng da leaf, nauclea, *Nauclea speciosa*, or thang.
- These shipments of kratom have come in a variety of forms, including capsules, whole leaves, processed leaves, leaf resins, leaf extracts, powdered leaves, and bulk liquids made of leaf extracts. Importers websites have sometimes contained information about how their products are used.

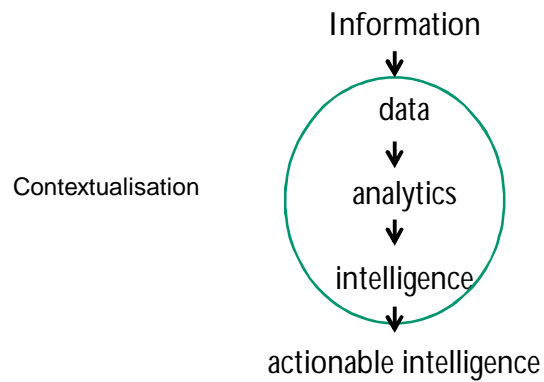
### 3. The fight begins

#### 3a. From hindsight to insight

- Early signs precede food safety incidents
- Early signals have generic characteristics
- Early signals often reside in science based data
- There is a small to large time window to influence emerging risk
- An open search strategy is needed to identify unexpected hazards

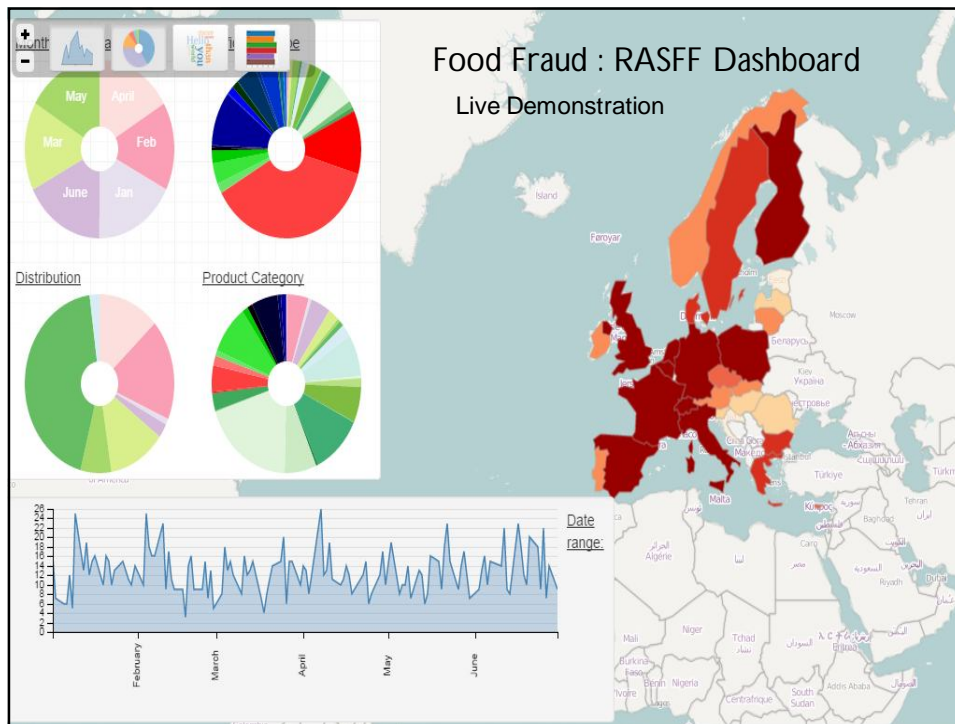
Brug et al, 2014, food control 39, p 75-86

## 3b. The intelligence continuum



## 3c. Focussed intelligence

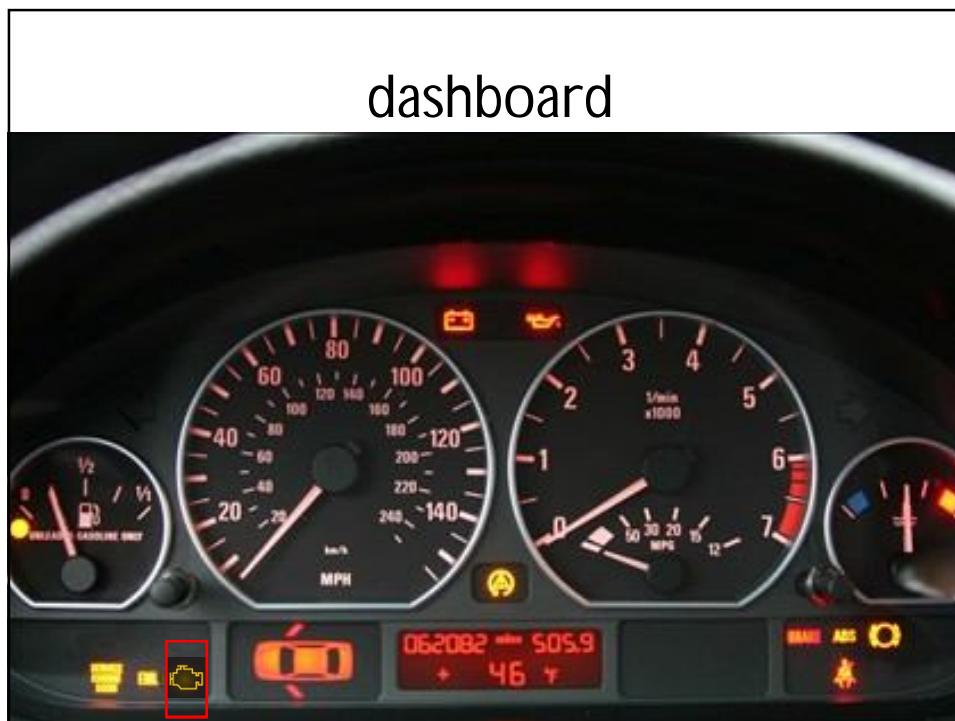
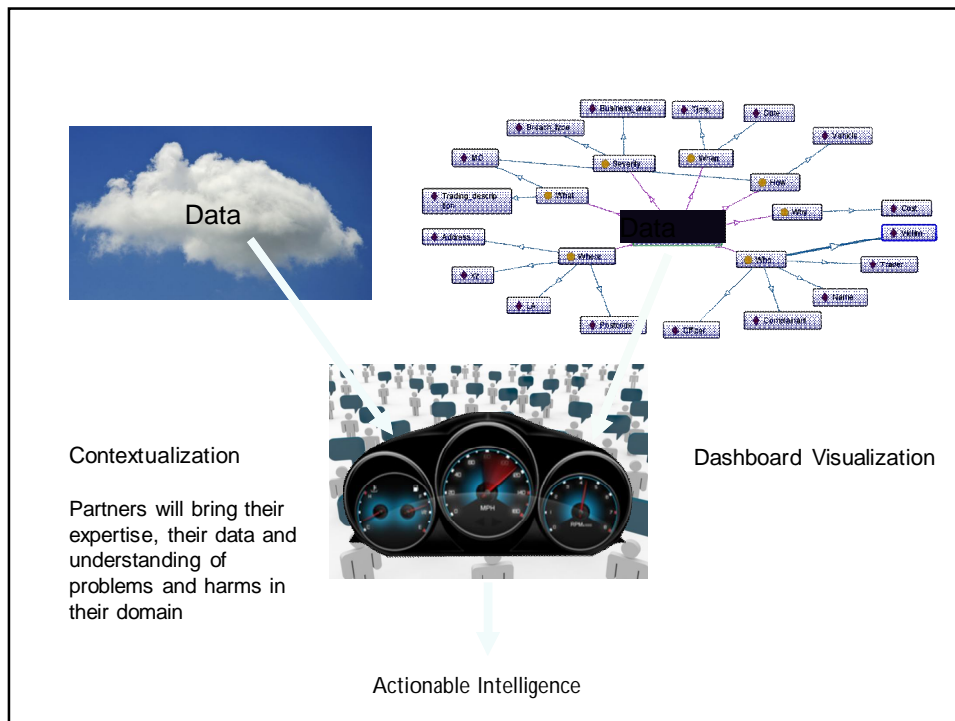
Contextualisation the bringing together of knowledgeable partners



### Web Observatory Live Demonstration


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## 4. the next problem area

A final Thought

- Transition economies - BRACS
  - 1860 Food Safety Act for London
- Weaknesses in our system
  - Austerity
  - Border Inspection Posts
  - W.W.W

### **Bibliography:**

**Gate keepers of EU food safety: Four states lead on notification patterns and effectiveness;**

Food and Chemical Toxicology, Volume 48, issue 7, July 2010, pages 1957-1964

**The Procrustean bed of EU food safety notifications via the Rapid Alert System for Food and Feed: Does one size fit all?**

Food and Chemical Toxicology, Volume 56, June 2013, Pages 411-418

**Early signals for emerging food safety risks: From past cases to future identification**

Brug et al. Food Control Volume 39, May 2014, Pages 75–86

### **Credits:**

#### **Kingston University**

Prof: D. P. Naughton  
Prof A. Petroczi  
T. Nepusz

#### **RASFF Database**

<https://webgate.ec.europa.eu/rasff-window/portal/index.cfm?event=notificationsList>

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## Questions & Thanks

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