**IT as a Utility Network+ workshop: Delivering food security from the cloud to the app**

**13 May 2014, Southampton**

1. Introduction and context

2. Presentation: Guy Poppy

3. Presentation: Gerard Parry

4. Topics discussed

* Standards, brokers and supply networks
* Communication and changing behaviour
* Data lifecycles

5. Areas to explore further and next steps

**1. Introduction and context**

This Southampton-based workshop on food security was the third in a series on the topic. The first was a two-day workshop held in September 2013 in County Antrim, Northern Ireland. A large meeting, primarily composed of presentations, it looked specifically at security and trust in the food chain, including the security of the information in this process, and was aimed at raising awareness and sharing ideas. Keynote speakers included Professor Alan Reilly, chief executive of the Food Standards Agency Ireland, Professor Tim Benton, champion for UK’s Global Food Security programme, Professor Robert Edwards, chief scientist at the Food and Environment Research Agency and Terry Donohoe, head of strategy and policy in the FSA’s Chemical Safety Division. (Read the report of the meeting. LINK)

The second in this series was a Food Standards Agency (FSA) internal workshop on data exploitation and food security which took place in London in December 2013. (Read the report of the meeting. LINK)

This open workshop followed the more usual ITaaU model of bringing together a smaller number of people to discuss key issues relating to a specific field and ITaaU in order to produce concrete follow-on actions. Participants included both policymakers and academics from a range of disciplines.

Overview of key issues:

* Economics and the power of supermarkets with regard to public health.
* Behavioural change and how that can be influenced by education.
* How food security in the UK is connected to the rest of the world.
* Socio-economics and demographics and interesting emerging data.
* Food intelligence and food security.
* How local food producers can tell a story about their products – and how technology can help them.
* Minimising waste, increasing resilience – how different kinds of knowledge in the supply chain and gathering knowledge from different stakeholders can provide effective intervention strategies.
* Investigating how the smallest farmers and food producers use technology.
* How to embed people in communities - trusted brokers – rather than parachuting in digital solutions.
* Need for more effective and efficient way for local food groups to communicate across the UK with other groups.
* Getting messages out to the public about what we're doing.
* Supermarkets and agrochemical business: what are the issues we would like to discuss with them?

**2. Presentation: Guy Poppy, director of multidisciplinary research and professor of ecology at the University of Southampton and also incoming chief scientific adviser for the Food Standards Agency (FSA)**

Guy Poppy provided an overview of the context and challenges around food security and highlighted waste as an area where IT could have an impact.

The global food system is complex. The vision is for food security alongside environmental stability in the context of global climate and population change (two of the biggest challenges we face). We are looking at a perfect storm in the nexus between food, energy and water – demand for all these is due to increase by 2030. There are issues of access, utilisation (food that is safe to eat) and resilience/security – we need to know there will still be food in 10 days time or five years time.

In the UK we are looking at a complex food web – we import from 184 different countries. In the UK demographics are a factor – we have an aging society. This contributes to public health risks and food security and safety. Older people have more vulnerable immune systems. There are issues around mobility and aging kitchen appliances. Those over 75 are less likely to adhere to food safety behaviours. Commercially, there are changes in the grocery retail market, with the rise of smaller supermarkets at both ends of the scale. There is consumer alienation from food production and preparation.

About a third of all the food on the planet is wasted before it reaches a human stomach. We could take the billion people out of hunger if waste could be avoided. Waste has economic consequences and, arguably, it's a moral issue if people are going hungry and/or if animals are dying needlessly. If we got rid of that waste then it would be equivalent to taking 20% of cars off the road in terms of energy and emissions. Waste is the area where IT could contribute most.

**Presentation:** **Gerard Parry**

Gerard provided background information about the September 2013 workshop in Ireland [see report] and raised some possible areas for further investigation.

These included:

* Schools – how to reach the next generation of consumers.
* Supply chain – traceability, tracking, tagging, physical security.
* Privacy – the FSA try to make all data available in an anonymised way but there are ethical issues (for example, where 20 families have been the subject of research and so there is now quite a lot of information about them that could be linked up to work out who they are, so there's a risk that we can no longer publish that data). Consent is also an issue, especially with social media.
* Resilience – the next big issue eg in the case of a pandemic and remote working and the government asking people not to congregate, go to work etc. Internet shopping would soar but is the telecoms infrastructure there for that? How are we planning for major exceptional events? Are we resilient to those major events?
* Data mashing and data sharing and linking.
* Identifying patterns from noise analysis - how to pick something out eg pricing if the market is flooded with fraudulent meat?

3. Topics discussed

* Standards, brokers and supply networks
* Communication and changing behaviour
* Data lifecycles

The standards and brokers break-out group discussion focused on:

* How to create a data system for eg chicken data.
* Everyone would put their chicken data into a system. The mains sources of data would be the industry (they already collect data about levels of contamination) probably facilitated by independent body eg British Poultry Council, working with an IT specialist eg ITaaU, who would be the broker for the data.
* So if there was an increase in amount of bacteria in the industry data then the FSA could see that from the data feeds, know that there may be a problem and do something about it.
* Different people can see different levels of data. The FSA's own data could be used to mirror the data. Could use the data to target areas to inspect. It would be of benefit to large retailers which could check their data against whole industry data. Consumer data would also be interesting for industry to help them improve their messaging to consumers.
* Chickens are suggested as a pilot but could apply this to other foods.

The communication break-out group discussion focused on:

* The enormous gap in people understanding that food security is an imminent problem. It needs to be targeted and carefully to different constituencies. Schools – recycling message very successful in schools. Can it be reproduced with food? Children have much less agency with food. Will it work?
* There are exclusions and inclusions with food security issues – some people are already having food security issues, others getting enough but not healthy.
* People are dealing with multiple messages, on social media and national campaigns and mainstream media. Need a multi-layered response.
* Example of recycling - very successful. National average of 41-43% but that's great considering that people have to do it themselves. Presence of bin itself can help. Neighbour surveillance. Food waste or composting bins so it becomes a social norm? Social media for specific neighbourhoods. Need governance approach. create a moral economy around food security and waste.

The data lifecycle break-out group discussion focused on:

* How to move from data to information, information to knowledge and knowledge to innovation. Opportunity to link different sources of data. Data could bring innovation to the market.
* Different systems are not talking to each other and there is an opportunity there.
* Challenges: How to identify the useful data sources? How to collect the data?
* How to convert the data into information and knowledge and innovation?

Follow-up comments from the plenary session

* The chicken database would require coordination to bring the data together. The data is there.
* Communication – misinformation also comes through in schools with children, but there is an opportunity to counter this misinformation and peer pressure – the FSA wants to swiftly respond to misinformation
* The immense power of the supermarkets – how do you incentivise them to get involved? Power of the consumer? Potentially an IT approach to have labelling/ethical coding system for the supermarkets about how they perform in these areas. Then people can see which is best for what they believe in.
* What if you could see the carbon footprint of every area in the supermarkets from biscuits to meat – the food miles?
* Supermarkets are the enabler or they could block ideas. But a small niche organisation can change the game sometimes.
* In communication, energy has come more up the agenda than food security. When prices go up people change their behaviour.
* Socioeconomics does not have a big influence on reported food behaviours. For key food safety behaviours the safest countries are Wales, Northern Ireland, Scotland then England; women are safer than men; 35-45 is the safest age group and over 75s the worst; people with children under five tend to be most aware of food safety; there is no relationship with income or educational attainment. Knowledge doesn't translate into behaviour change in people with regard to food.

5. Areas to explore further and next steps

Gap analysis

What have we not spoken about and who have we not contacted? Eg: end users, farmers (both large and small scale), producers, supermarkets, Defra (labelling etc) and Dept of Health (nutrition)

Mapping

Map of all the different data sources. FSA keen but needs help. (Stage one could be to narrow it down to the chicken cycle and map that. Stage two could be the macrobacterial information (camphobacter?) and map that. A specific scenario.)

Map what the FSA has. Useful for them and for everyone as FSA doesn't even know what it has.

Next FSA workshop

Bring in supermarkets. What work should we do prior to that? Firm up the exemplar. Come up with a two-page story about what we could do with it, who has what and putting the pieces together, the rationale for the consumer, the industry and government.

Best practice request

Send names and topic of anyone they can recommend and if should contact them directly or through you for best practice workshop.