

Are cities connected by data better at feeding people?

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Food and Cities: An obsession with data

- **On the one hand**

- cf. Adrian Morley's talk
- Food Waste - 30-50% of food is thrown away
- Food poverty - 0.5M people depend on food aid in UK
- Food crises (horsemeat scandal for example)

- **On the other hand:**

- Food origin labelling
- Certification (organic etc.)
- Individual purchasing habits tracked
- Targeted ads via smartphones depend on data

Connected by Data

- = Connected by technology to information
- We always had some data: word of mouth, labels, packaging, branding, certification (organic, fairtrade)
- In the “Smart City”, this means connecting a myriad devices to share information: smartphones, fridges, cars, garbage bins, cookers, etc. = the Internet of Things
- Perhaps data can solve some of the problems mentioned

Data is transforming the food industry already

- Mobile phone networks in Africa
- Club cards in the UK
- Precision agriculture (e.g. where GPS drives tractors, soil data helps determine fertiliser inputs)
- Satellite imagery for micro-insurance in Africa
- Big worldwide initiative for Open Data (i.e. public data) about food and agriculture - GODAN

Connecting Who to Whom?

- Farmer to trader
- Trader to retailer
- retailer to consumer (one direction mostly)
- Farmer to consumer (??)
- Consumer to retailer
- Farmer to Farmer
- Consumer to consumer (?? transition town networks)
- Government to farmer and back again
- ? Fridge to retailer
- ? Fridge to farmer

this all mediated by devices - smartphones, smart meters, sensors, the Internet of Things etc.

How can this help?

- Better farm data means bigger crops
- Better food production data may avoid food crises
- Better retail data could mean lower waste
- Better overall efficiency may mean lower prices
- Better communication might lead to cooperation in the community

Scenario 1: No data at all

- Let us imagine:
 - no information on labels - just "milk", "bread", "baked beans"
 - Very hard to do because we are used to so much.
 - It was the reality in villages not so long ago, and in cities over 100 years ago, still reality in many remote third world regions
 - Still true of some veg markets - BUT human contact allows you to ask questions
 - Lots of problems
- **Basically - ignorance is bliss, but human contact mitigates this**

Question: In scenario 1 - what do you think you would miss?

1. not knowing the ingredients
2. not knowing the country of origin
3. not knowing the fat or salt content
4. no knowledge of organic or fairtrade
5. would not care

Scenario 2: Some data (today)

- This we live today:
 - Labels on food (ingredients, country of origin, organic/fairtrade, nutritional info)
 - Public discussion about food
 - Data collected by supermarkets about your buying behaviour
 - Limited detail e.g. animal welfare, pesticide residues, actual origin,
 - Limited communication e.g. with farmer, even with retailer
 - Limited use of data by society at large
- **Basically - you know a certain amount, some data is available shared**

Question: What do you think?

1. I am overwhelmed with information/data already!
2. I know enough about my food
3. I want to know more about origin or method of growing
4. I want to know more about animal welfare
5. I really do not care ...

Scenario 3: More Data

- The farmer can post his available apples, my pre-programmed smartphone can bid for them
- I tell my supermarket my travel plans so they adjust purchase orders accordingly
- The sensors on my apple tree alert the local community network that they can come pick my apples
- My smartphone scans an apple and tells me exactly what pesticides were used
- The local supermarkets sends an urgent automated message of potential waste food, local charity can collect
- **Basically- You control your own data**

Scenario 4: Data Max - Supersmart City

- A possible future:
 - My fridge tells my smartphone that I am low on milk
 - My fridge tells my supermarket I will buy milk today
 - My smartphone tells me I can help collect apples in a local garden (and burn the extra calories I need to ..)
 - “My” farmer knows on his smartphone that 10 people will help this saturday collect apples
 - My supermarket is able to order apples from “its” local farmers
 - My doctor tells me to go more apple picking because I “disobeyed” my smartphone
- **Basically - all data flows everywhere to everyone**

Question: In this cyber future ...

1. You think you should obey your smartphone!
2. You are glad your doctor supports you to lose weight/avoid diabetes
3. You do not want your doctor to know your eating habits
4. You think you should control your data
5. You emigrate

Questions?

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