

# The potential role of open data in supply chain integration

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# Food is infrastructure

- An invisible system that supports our lives ("infrastructure is our life support system" @paulgrahamraven)
- “invisible” — means it works
- “invisible” — means it is not transparent



# Transparency means data integrations

- **Drivers for Data Integration**
  - Need for transparency - tracking and tracing
  - Desire for food awareness - on the part of consumers, but not only
  - Regulatory pressure - e.g. EU Regulation 1169/2011
  - New business opportunities ....



# Food Crises and Scandals

- Major driver for greater data integration (whether open or closed).
- E. Coli in Germany in 2011 - Spanish growers lost over €200M
- Horse meat scandal across Europe in 2013 - impact very great on some supermarkets





# Lack of Data Integration

- Both scandals suffered from lack of data and **data integration**
- E. Coli - who affected? what purchased? where? when? and who participated in the supply chain
- Horse meat - six months for Irish FSA to map the supply chain network
- Need for greater supply chain transparency = need for data integration



# Trust - 1





# Trust - 2



- More information, more data = more trust

# What role Open Data here?



# What is “Open Data”?

- Open Data is part of a wider movement (e.g. wikipedia)
- Open Data is part of a movement for more efficient decision making processes than **price signalling** (cf. Hayek 1945)
- Open Data is data that is available for anyone to use, build upon, and build business services around
- **More information rich, more equitable (if we are lucky)**
- **Lots of business opportunities!!!**

# Open Data in agri-food

- Suddenly Open Data is all the fashion cf. G-8 International Conference on Open Data for Agriculture April 2013
- World-wide explosion of data sources:
  - [data.fao.org](http://data.fao.org)
  - <http://www.gbif.org>
  - (US) <http://www.data.gov/food/community/food>
  - <http://inspire-geoportal.ec.europa.eu>
  - <http://www.foodsecurityportal.org>
  - <http://data.worldbank.org>
  - <http://open-data.europa.eu>



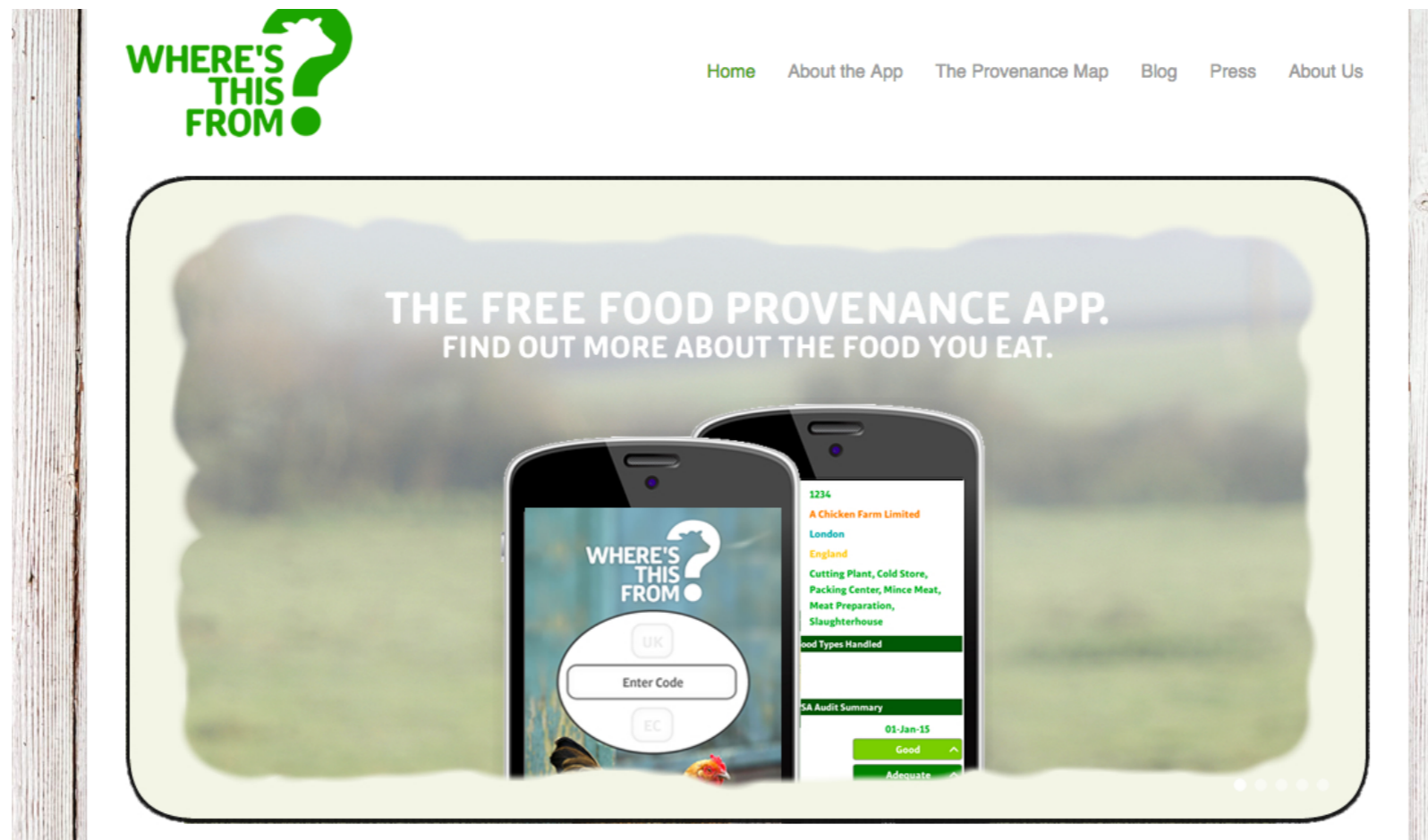
# Across Europe: UK

- World leader in Open Data
- [data.gov.uk](http://data.gov.uk) has very large collection of agri-food data sets
- Data comes from many government agencies
- Many agri-food data sets listed but not available e.g. from FERL and other institutes

## Where's This From?



# The “Where’s this from” App



[http://  
www.wheresthisfrom.co  
m](http://www.wheresthisfrom.com)

- Uses FSA meat audit reports linked packaging codes
- Reports on: animal welfare, slaughtering hygiene, animal hygiene, HACCP (bacteria)
- Weaknesses: audits are carried out by local authorities, budget cuts, and often no inspection has occurred.



# Across Europe: The EC

- Most important is: <http://open-data.europa.eu> - many data sets out of date
- AND
  - Health and Consumers (SANCO) has **published** consolidated data sets from EFSA – European Food Safety Agency, ECDC – European Centre of Disease Control, EMA – European Medicines Agency, CPVO – Community Plant Variety Office
  - Available as **RDF and JSON** [http://ec.europa.eu/dgs/health\\_consumer/information\\_systems/index\\_en.htm](http://ec.europa.eu/dgs/health_consumer/information_systems/index_en.htm)

# Across Europe: Germany

- Commitment to G8 initiative
- No national equivalent to [data.gov.uk](http://data.gov.uk)
- National Statistics Office (<https://www-genesis.destatis.de/> ) but not exactly “open data”
- Main driver is KTBL (<http://www.ktbl.de>)
  - Main data sets include pesticide data/plant variety data, and crop models
  - Gradually to be released as Open Linked Data



# Across Europe: France

- Government data portal: <http://www.data.gouv.fr> (only 16 data sets concern agri-food)
- Two initiatives concerning food product data:
  - <http://product-open-data.com> —> now part of OKFN, has 900,000 GTIN codes
  - <http://openfoodfacts.org> —> crowd sourcing data, now has 14,000 products

# OpenFoodFacts

**OPEN FOOD FACTS**  
l'information alimentaire ouverte

Open Food Facts répertorie les produits alimentaires du monde entier.

→ Marques  
→ Catégories  
→ Additifs

Les informations sur les aliments (photos, ingrédients, composition nutritionnelle etc.) sont collectées de façon collaborative et mises à disposition de tous et pour tous usages dans une base de données ouverte, libre et gratuite.

Licence  
La base de données Open Food Facts est disponible sous la licence [Open Database License](#). Les contenus individuels de la base de données sont disponibles sous la licence [Database Contents License](#). Les photos de produits sont disponibles sous la licence [Creative Commons Attribution Partagée à l'identique](#). Elles peuvent contenir des éléments graphiques soumis à droit d'auteur ou copyright, qui peuvent dans certains cas être reproduits (droit de citation ou "fair use").

Les produits dans d'autres langues (en cours de développement) :  
→ Deutsch  
→ English  
→ Español

**Mayonnaise à la moutarde de Dijon**  
Code barre : 3760020500603

**Caractéristiques du produit**  
Quantité : 400 g  
Conditionnement : Flacon, Plastique  
Marques : Jardin Bio'  
Catégories : Mayonnaises, Epicerie, Sauces  
Labels, certifications, récompenses : Bio européen, Bio, ECOCERT, Producteur régionaux, AB Agriculture Biologique

**Ville et pays d'achat** : Amplepuis, France  
**Magasins** : Intermarché  
**Pays de vente** : France, Europe

**Ingrédients**  
→ Les ingrédients sont listés par ordre d'importance (quantité).  
**Liste des ingrédients** : Huile de tournesol, eau, moutarde de Dijon 9% (graines de moutarde, vinaigre d'alcool, eau, sel), jaune d'oeufs, vinaigre de cidre, citron, sel, gomme xanthane, arôme naturel de curcuma.

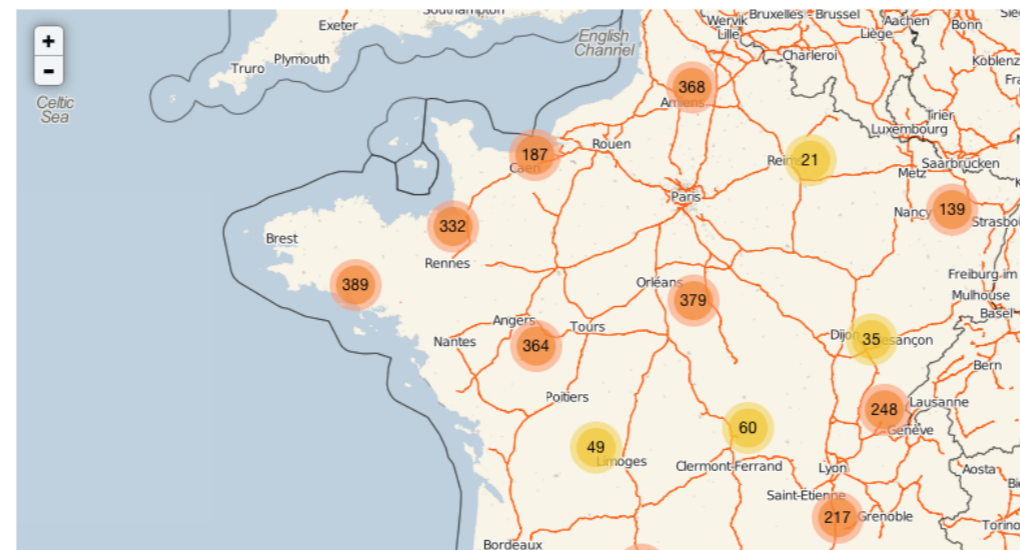
**Additifs** :  
• E415 - Gomme xanthane

**Informations nutritionnelles**  
Rendements nutritionnels pour 100 g :

**C'est fabriqué près de chez vous**  
La carte des produits alimentaires

## Consommer local ?

*C'est fabriqué près de chez vous* montre sur une carte les lieux de production, de transformation et/ou d'emballage. Cette carte peut vous être utile si vous êtes adepte du "consommer local", ou si vous êtes curieux de voir quels sont les lieux de production et quelle est la provenance de leurs ingrédients.



**Combien de sucres ?**

Combien de sucres dans le produit **Mayonnaise Fine Ligne Leader Price ?**

Mayonnaise allégée  
Marque: Leader Price  
Quantité : 255 g

À combien de petits morceaux de sucre (4g) équivaut 255 g de Mayonnaise Fine Ligne Leader Price ?

**Poser la question à vos amis !**

0 0 0  
Twitterer J'aime 8+1

Buttons: -1, +1, -5, +5, Checkmark



## GS1 - Hopefully (not so) soon open data (?)

- GS1 product information - everything connected to barcodes/RFID
- Fundamental link between products along the supply chain
- Sort of available:
  - GEPIR: Global Electronic Party Information Registry - allows limited lookup of GTINs
  - Data belongs to food producers .... and not yet openly available
- GS1 are aware of the need to open up ....

# Types of Data

Open Data  
= Gov Data?

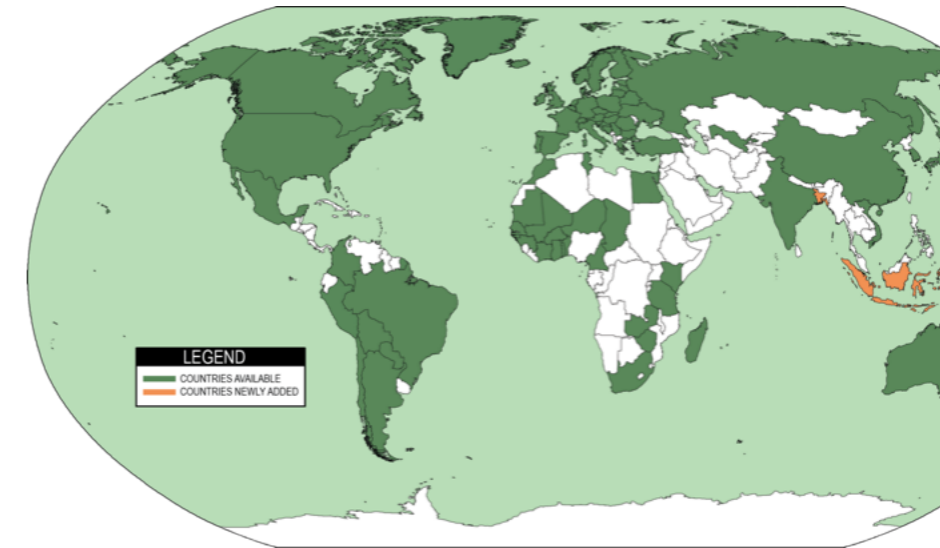
Closed Data  
= Private + Gov Data

Commercial  
Data

Privacy?

# Homologa

- “Homologa™, The Global Crop Protection Database” - <http://www.agrobase-logigram.com/pages/homologa.html>
- Combines pesticide regulations and Minimum Residue Level data from around the world
- Commercial product built on multiple sources including public/open data.



Update schedule for registered products

Country	Average updates/year	Basic product Info	Crop info	Pest info	GAP info
<b>Europe/CIS</b>					
Austria	12	x	x	x	x
Belarus	2	x	x	partially	x
Belgium	12	x	x	x	x
Bulgaria	2	x	x	x	x
Croatia	1	x	x	x	x
Cyprus	2	x			
Czech Republic	8	x	x	x	x
Denmark	6	x	x	x	x
Estonia	12	x	x	x	x
Finland	8	x	x	x	x
France	12	x	x	x	x
Germany	12	x	x	x	x
Greece	9	x	x	x	x



# What we need!

- **End-to-end supply chain data that is "as open as possible"**
- **Beginnings are occurring:**
  - In UK - Where's that From (app) using open FSA data
  - In France - OpenFoodFacts - food product ingredients crowdsources from labels

# Data is Infrastructure

- “National Information Infrastructure” @jeniT
- Like all infrastructure somebody pays for it
- It moves like roads (in the 18th century) from a private invention to a public utility
- **So agri-food data needs to become a “public utility”**
- Where we draw a sensible line between public and private/commercial data is up for discussion and negotiation
- Cost of data capture is decreasing

# Social Opportunities

- to connect farmers to eaters
- to connect eaters to the sources of their food
- to connect people who share common food and agricultural interests
  - connect farmers at a local level
  - connect connect eaters to each other
- enable every actor along the food supply chain to feed data/queries into the network



# Business Opportunities

- Allowing farmers to ‘know’ their end consumers
- Enabling all actors (suppliers, logistics, retailers) better planning, faster response to changing demand
- Reducing waste through the supply chain
- .... many unforeseeable opportunities

# The Ethical Challenge

- Will this be beneficial to wider society?
  - for farmers?
  - for consumers/eater?
- Complex networks tie people into complex systems
- Will this benefit the soil?
- **Possibly, in part, if we make careful choices**

Thank you

<http://www.cbrewster.com>



<http://www.smartagrifood.eu>



<http://www.fispace.eu>