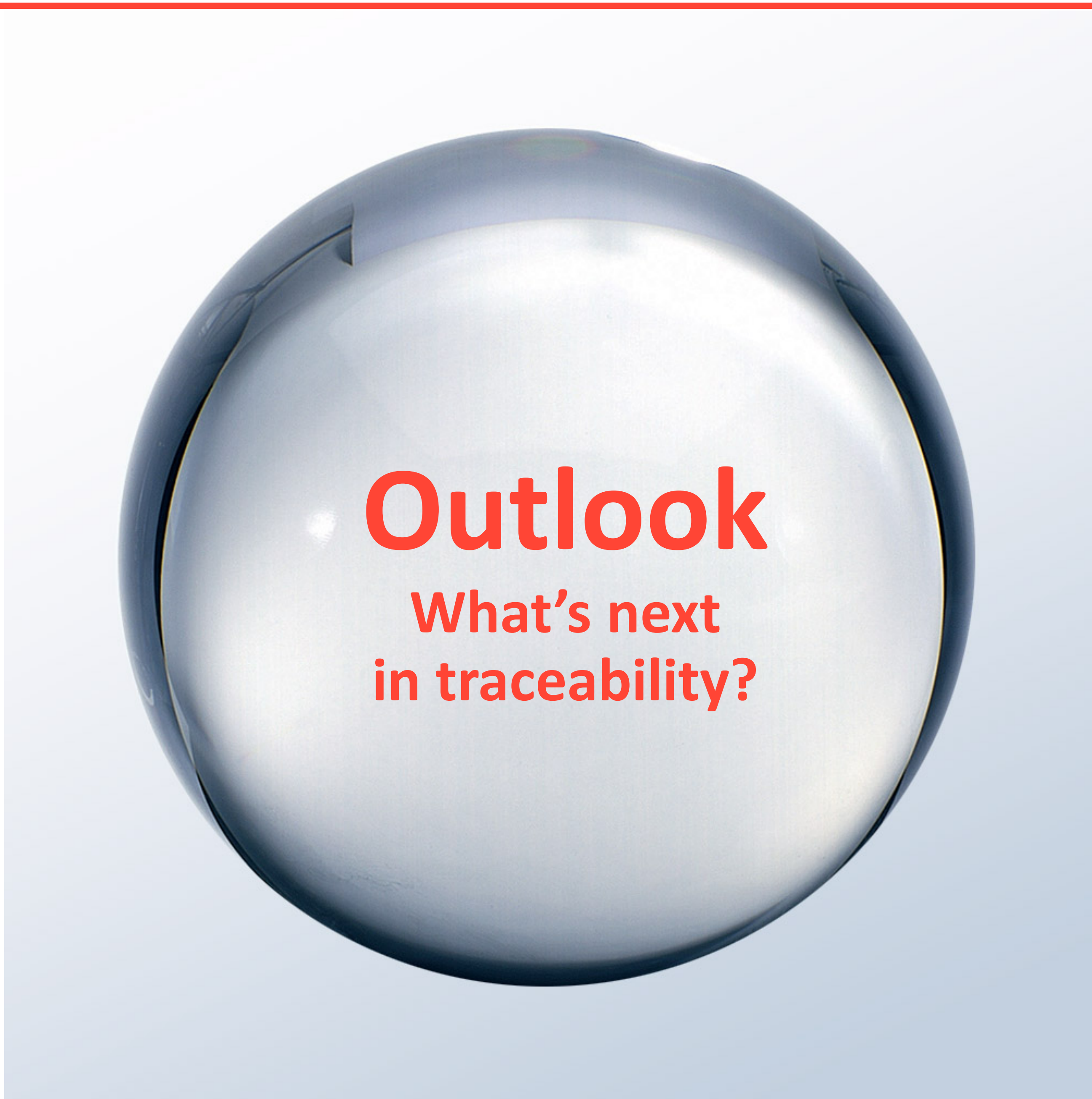
Outlook

What’s next in traceability?



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- Adoption of traceability systems for purpose of food safety and disease control has only been possible by mandate
  - Industry unhappy
  - Complaints about unfair competition of exporting nations
  - Unclear cost-benefit relationship
- Insistence on food scares has led to perception of traceability as a cost
  - Cost benefit studies are difficult, but there are clear indications that
- There is a shift away from traceability as a purpose of its own to traceability as an enabling technology
- Traceability as a marketing tool is still under “evaluation”
- In the following, two examples for potential services

Cost-benefit analysis food safety

Case Study	Pathogen	Maximum Illnesses Prevented	Percent of Total Illnesses Prevented	Average Economic Impact per Day Reduction	25% ↓ Time	50% ↓ Time	75% ↓ Time	Maximum Economic Benefit (+100%)
Peppers and tomatoes (2008)	*Salmonella* Saintpaul	790	55%	$277,275	$8M	$12M	$13.6M	$14M
Cantaloupe (2008)	*Salmonella* Litchfield	1	2%	1,053	$18K	$18K	$18K	$18K
Raw alfalfa sprouts (2009)	*Salmonella* Saintpaul	73	31%	$23,758	$465K	$806K	$1.2M	$1.3M
Red and black pepper spice (2010)	*Salmonella* Montevideo	47	17%	$16,496	$286K	$573K	$716K	$841K
Unspecified Mexican food (2010)	*Salmonella* Baildon	2	3%	$1,377	$0	$0	$18K	$36K
Shell eggs (2010)	*Salmonella* Enteritidis	120	3%	$268,500	$537K	$1.1M	$1.6M	$2.1M
Ground turkey* (2011)	*Salmonella* Heidelberg	17	13%	$16,016	$72K	$125K	$179K	$304K
Fresh cantaloupe (July 2011)	*Listeria monocytogenes*	28	19%	$153,440	$219K	$384K	$493K	$767K

*FSIS regulated product

Source: IFT, Pilot Projects for Improving Product Tracing along the Food Supply System – Final Report

Perceived benefits

Recordkeeping Benefits	Growers (n=2)	Processor (n=6)	Distributors (n=8)	Retailers (n=4)
Improved Brand Reputation	100%	33%	62%	50%
Increased Consumer Confidence	0%	67%	75%	25%
Expanded Markets	50%	33%	50%	25%
Improved Supply Chain Management	50%	67%	62%	100%
Insurance Cost Reduction	50%	33%	12%	0%
Supply Chain Confidence	0%	83%	75%	25%
Decreased Spoilage	50%	67%	75%	25%
Process Improvement	100%	33%	100%	100%

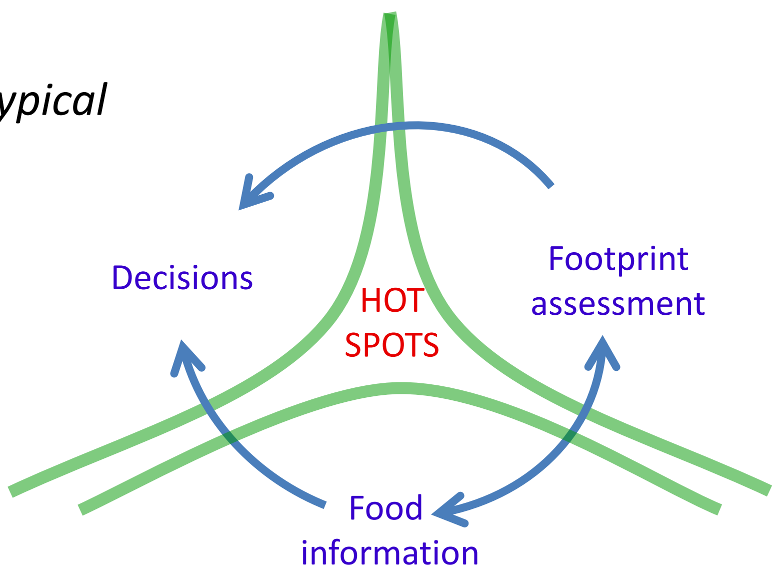
Source: IFT

SUSTAINABILITY MONITORING

- Typically the footprint of a product is determined by calculating inputs and outputs during the lifetime of the product

- Methods range from
  - Simplified calculators to
  - Sophisticated *life cycle assessment* (LCA)

- These methods
  - rely on the existence of *databases* which supply footprint contributions for *typical* ingredients, distances travelled etc
  - are <u>abstract</u> and <u>static</u>, i.e.
  - provide a *sketch* of the footprint at a particular point in time



- LCA is accepted as the standard methodology to assess footprints, but
  - It is very time consuming
  - Requires extensive expertise
  - Has to be repeated regularly
  - Is very expensive
- => LCA is not apt for just-in-time sustainability management
- Solution
  - Use operational data available from traceability to calculate impact, based on LCA
  - Create a decentralised infrastructure for data recording, with a consolidation motor
- This provides the three basic ingredients:
  - Calculation of inputs and outputs mapped to processes or assets, so that an operational process can be linked to the corresponding footprint
  - An infrastructure and applications for decentralised data capture
  - An infrastructure and applications for centralised reporting

- **LCA**: an established method to determine footprint impacts
- **SMCCP** (sustainability management and critical control points): a new method to determine which operational processes or assets are essential to monitor
- **CSI-MS** (Chain Sustainability Information Management System): chain traceability and information management system for
  - Collecting sustainability information,
  - Collating it and