



Food Traceability

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Outline

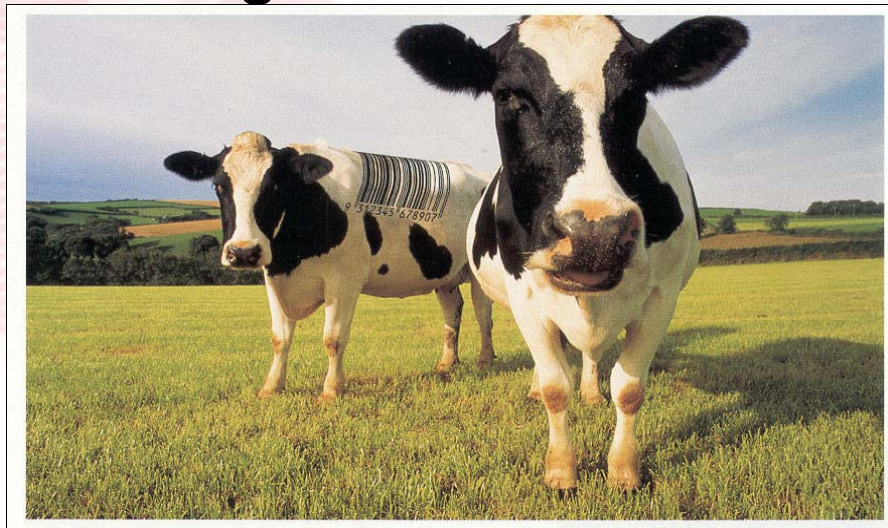
- ▶ **Introduction to Traceability**
 - ▶ **History, Definition, Why is it an issue?**
- ▶ The Drivers
 - ▶ What is the Business Case? Why bother?
- ▶ Standards
- ▶ A Canadian Perspective
 - ▶ CLIA and Can-Trace

Traceability is not new!

- ▶ 1700 BC Mesopotamian shepherds mark animals with different colors
- ▶ 7th Century China tattoos breed horses
- ▶ 1556 Venice hires food inspectors
- ▶ 1714 France outlaws un-inspected meat
- ▶ 1750-90 UK pass variety of food safety laws
- ▶ 1875 Marking of U.S. livestock with tags

What is Traceability?

- ▶ Traceability: “the ability to trace the *history*, *application* or *location* of that which is under consideration” (ISO)
- ▶ Tracing: Looking back
- ▶ Tracking: Looking forward

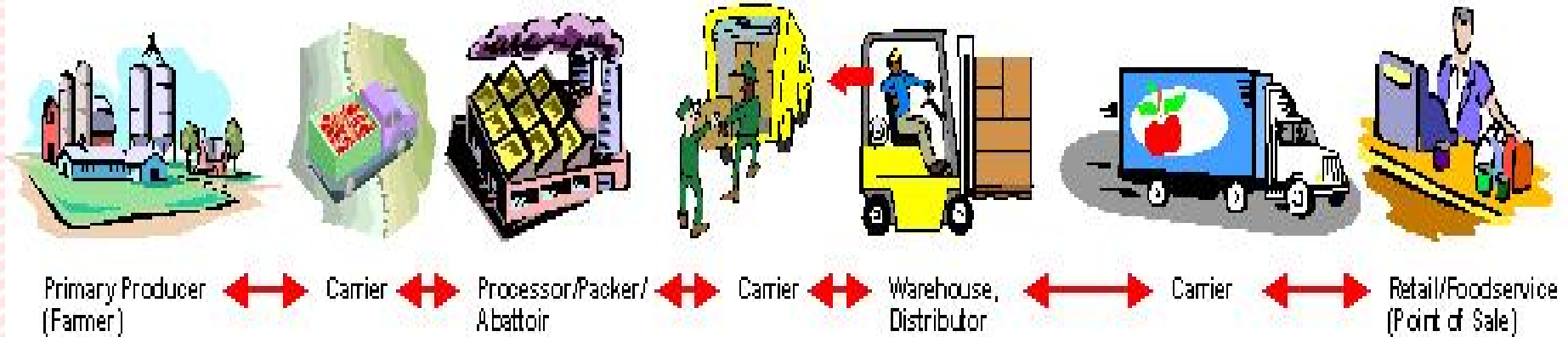


What is Traceability?

- ▶ An information management tool
- ▶ Not an end in itself: supports other goals
- ▶ What do you need?
 - ▶ Compatible data elements [information]
 - ▶ Data capture and data transmission
 - ▶ Ability to recall from supply chain

Supply Chain Flow

Flow of Products through the Supply Chain



Flow of Information through the Supply Chain

What is Traceability?

- ▶ A traceability system is driven by information and must answer these questions:
 - ▶ What is the product?
 - ▶ How much is there?
 - ▶ Where did it originate?
 - ▶ Where is it/Who has it now?

What Traceability is *Not*?

- ▶ Traceability \neq safe food
- ▶ Traceability does *not* prevent animal disease
- ▶ Traceability is *not* a prerequisite for safe food or healthy plants and animals
- ▶ Traceability is *not* driven by technology

Steps on the Pathway to Traceability



- ▶ Discovery of pathogenic organisms
- ▶ Establishment of control mechanisms
- ▶ Spread of international rules and compliance
- ▶ Business efficiency and supply chain effectiveness

Outline

- ▶ Introduction to Traceability
 - ▶ History, Definition, Why is it an issue?
- ▶ **The Drivers**
 - ▶ **What is the Business Case? Why bother?**
- ▶ Standards
- ▶ A Canadian Perspective
 - ▶ CLIA and Can-Trace

Drivers: Why is Traceability Important?

- ▶ Media attention on food safety & quality issues
- ▶ Globalization of the Market
- ▶ Increasing liability and litigation
- ▶ Huge economic interests at stake
- ▶ Supply chains have become complex

The New York Times

NATIONAL DESK | November 14, 2004, Sunday



DANGEROUS DATA -- Retracing a Medical Trail; Despite Warnings, Drug Giant Took Long Path to Vioxx Recall

The Washington Post

U.S. to Reopen Border for Import of Some Canadian Cattle

After Mad Cow Scare, Northern Neighbor Is Now Considered 'Minimal-Risk Region' for the Disease

Associated Press

Thursday, December 30, 2004; Page A05

THE ARIZONA REPUBLIC

ONLINE PRINT EDITION

THE WALL STREET JOURNAL

EU Agrees on Traceability Rules for Genetically Modified Food

Increased border security a problem for trucking companies

Washington Times

U.S. sour on EU's rules for bio-foods

By Sarah Muench

Special for The Arizona Republic

Feb. 15, 2005 12:00 AM

Why do Companies Invest in Traceability?

- ▶ They Have to:
 - ▶ Regulatory Requirement
 - ▶ Customer Requirement
- ▶ They Want to:
 - ▶ Risk Mitigation
 - ▶ Market Access
 - ▶ Supply Chain Efficiency



Drivers: Regulatory Requirements

- ▶ Europe – EU Food Law
 - ▶ Adopted 2002 to ensure a high level of health protection
- ▶ U.S. – Bio-Terror regulations
 - ▶ 9/11 highlighted vulnerability of the food supply.
 - ▶ Final Rule on Establishment and Maintenance of Records

Drivers: Regulatory Requirements

- ▶ Japan – Beef traceability, BSE testing
- ▶ Canada – Livestock Identification Program
- ▶ Chile – National Beef/Salmon Traceability
- ▶ Australia – Integrated Market Development

Drivers: Market Access Issues

- ▶ Some large customers are saying: get traceability or we won't do business
- ▶ Wal*Mart: "RFID will revolutionize the business..."
- ▶ McDonald's: "We know exactly which logistics path every single ingredient has taken..."

Drivers: Risk Mitigation

- ▶ Traceability systems produce information which can shield a company from costly legal claims
- ▶ Traceability systems will reduce:
 - ▶ Recall Frequency
 - ▶ Recall Scope

Drivers: Improved Business Processes

- ▶ Improved Efficiency
 - ▶ Automotive parts sector enabled N/Am auto industry to regain control of its supply chain
 - ▶ Information can be used to improve processes, quality, transportation logistics and reduce costs
 - ▶ Requires more than automation

Pro and Cons of Mandating

- ▶ Should Food Traceability be Mandatory?
 - ▶ Depends on the objective and the risk
 - ▶ Voluntary systems support regulatory objectives
 - ▶ In Canada, governments regulate or “mandate” where public health or market access is at risk
 - ▶ Governments don’t want to regulate supply chains

Outline

- ▶ Introduction to Traceability
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- ▶ The Drivers
 - ▶ What is the Business Case? Why bother?
- ▶ **Standards**
- ▶ A Canadian Perspective
 - ▶ CLIA and Can-Trace

Standards Organizations

- ▶ Codex Alimentarius Commission
 - ▶ Codex was created to protect consumer health and ensure fair trade practices
- ▶ ISO
 - ▶ ISO 22005: Traceability in the feed and food chain – General principles and guidance for systems design and development
 - ▶ Objective: provide security by eliminating weak links in the food supply chain

Standards Organizations

- ▶ OIE
 - ▶ Working Group on Animal Production and Food Safety
- ▶ AIM International Livestock Traceability Standard
 - ▶ Technical Report: "RFID for Food Animal Identification in N/Am"
- ▶ GS 1 (formerly EAN.UCC)
 - ▶ GS1 Traceability Standard for all industry sectors

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- ▶ Standards
- ▶ **A Canadian Perspective: Two Initiatives**
 - ▶ **CLIA and Can-Trace**

Situation in Canada

“Canadians are working together”

- ▶ The Agricultural Policy Framework (APF) set a goal of *“making Canada a world leader in food safety and quality, innovation and environmentally responsible production”*
- ▶ Governments have provided program funding to facilitate traceability.



Situation in Canada

- ▶ No national mandating of traceability on a *broad* basis
- ▶ Great interest in standardized approach
- ▶ Enterprise-wide hi-tech traceability systems still not that common



Initiatives Underway

- ▶ Can-Trace – Food Traceability Data Standard
- ▶ Canadian Livestock Identification Agency
- ▶ Canadian Cattle Identification Agency
- ▶ Agri-Traçabilité Québec – RFID traceability for livestock
- ▶ Canadian Pork Council – Hog identification strategy
- ▶ North American Traceability Best Practices for Produce
- ▶ Canadian Identity Preserved Recognition System
(Canadian Seeds Institute and Canadian Grain Commission)



Canadian Livestock Identification Agency (CLIA)

▶ **Mandate:**

- ▶ Develop “whole-life” (birth-to-slaughter) traceability system for Canada for livestock

▶ **Benefits:**

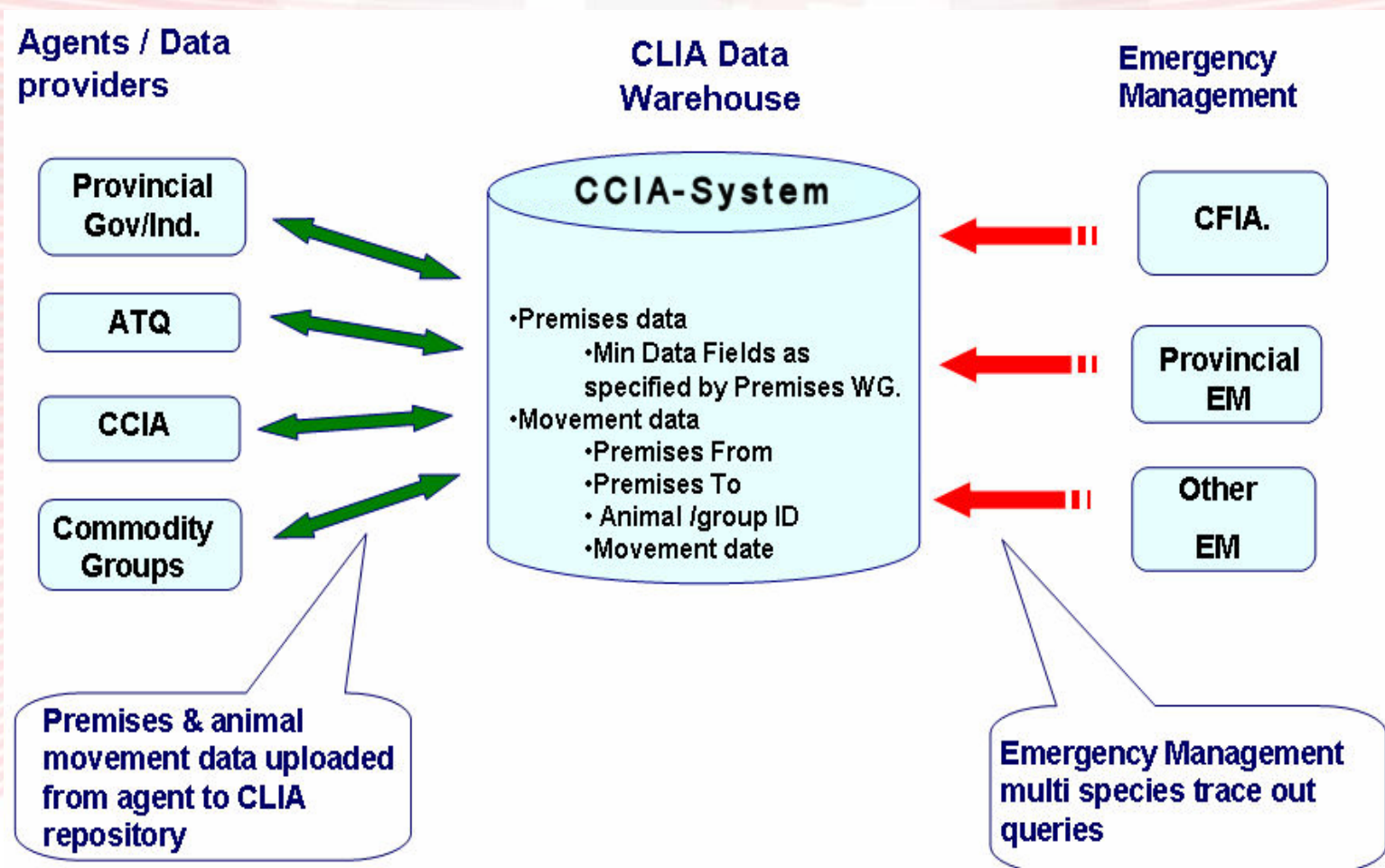
- ▶ Minimize impact of a foreign animal disease outbreak
- ▶ Reinforce export market access
- ▶ Improve competitiveness of animal Agri-food sector



Canadian Livestock Identification Agency (CLIA)

- ▶ Moving from mandatory ID to full traceability for all species
- ▶ Phased approach
 - ▶ **Group 1:** – beef, dairy, bison, sheep
 - ▶ **Group 2:** – Species that have developed or are developing an ID-traceability strategy (pork, equine, goats)
 - ▶ **Group 3:** -- Other groups

Canadian Livestock Identification Agency (CLIA) – “CATS” System





Can-Trace

- ▶ A national, multi-sector, whole-chain collaborative initiative to establish minimum data requirements for traceability
- ▶ Scope: primary producer to back door of retail (grocery)/foodservice
- ▶ Voluntary initiative; Voluntary standard
- ▶ Industry-led but government funded

Initial Objective: An information standard

- ▶ *Voluntary* food traceability data standard with mandatory and optional data requirements
 - ▶ Generic in nature
 - ▶ Not technology dependent
- ▶ Establish a consistent approach to what information needs to be exchanged
- ▶ Canadian Food Traceability Data Standard

Can-Trace: Why did we undertake it?

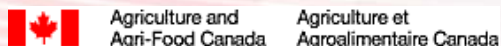
- ▶ Lack of a whole chain approach on the market
- ▶ Lack of consistent standards for sharing information between supply chain partners
- ▶ Proliferation of solutions and systems
- ▶ Desire for an industry approach rather than one imposed by government
- ▶ Clear signals from the marketplace

Can-Trace: Accomplishments to Date

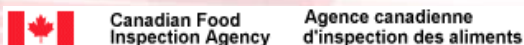
- ▶ A community that spans the full supply chain and includes major food sectors
- ▶ Canadian Food Traceability Data Standard (CFTDS) v 2.0
 - ▶ Focus on “what” information to exchange, not “how” to implement
- ▶ Provided leadership at global level (GS1)

Industry and Government Participation

▶ **AAFC – Agriculture and Agri-Food Canada**



▶ **CFIA – Canadian Food Inspection Agency**



▶ **CCIA – Canadian Cattle Identification Agency**



▶ **CLIA – Canadian Livestock Identification Agency**

▶ **COFFS – Canadian On-Farm Food Safety**

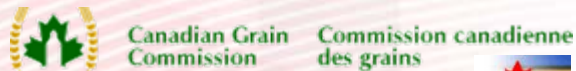
▶ **CPC – Canadian Pork Council**



▶ **Fisheries Council**



▶ **Canadian Grain Commission**



▶ **Canadian Grains Council**



▶ **FCPC – Food and Consumer Product of Canada**



▶ **OMAF – Ontario Ministry of Agriculture & Food**



Ontario

▶ **FDTA - Fonds de développement de la transformation alimentaire**



▶ **CRFA – Canadian Restaurant and Foodservices Association**



▶ **CPMA – Canadian Produce Marketing Association**



▶ **CCGD – Canadian Council of Grocery Distributors**



▶ **CAIC – Canadian Aquaculture Industry Alliance**



▶ **CFG – Canadian Federation of Independent Grocers**



▶ **GS1 Canada**



▶ **CMC – Canadian Meat Council**



▶ **Saskatchewan Herb & Spice Assoc.**

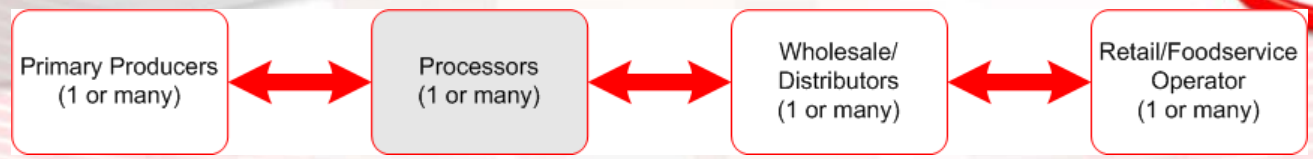


▶ **CPEPC – Canadian Poultry & Egg Processors Council**

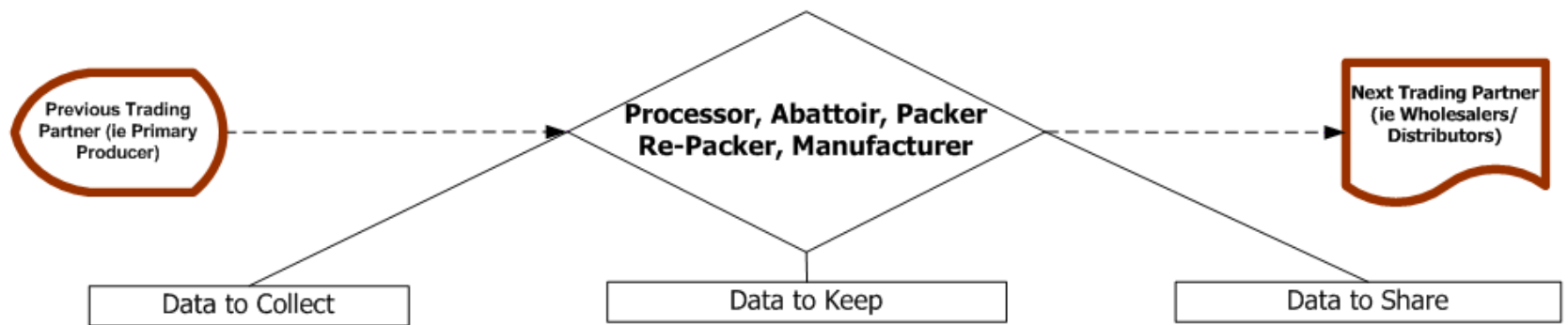


▶ **MAPAQ – Ministère de l'Agriculture, des Pêcheries et de l'Alimentation**





Can-Trace Beef Processor MANDATORY Data Requirements



Data to Collect	Data to Keep	Data to Share
<p>From PREVIOUS Trading Partner</p> <ul style="list-style-type: none"> * Input Lot Number * Input Product Identifier * Product Description * Quantity * Sender Identifier * Ship From Location Identifier * Shipment Identifier * Unit of Measure <p>From NEXT Trading Partner</p> <ul style="list-style-type: none"> * Receiver Identifier * Ship To Location Identifier 	<ul style="list-style-type: none"> * Input & Output Lot Number * Product Description * Input & Output Product Identifier * Quantity * Receiver Identifier * Sender Identifier * Ship From Location Identifier * Ship To Location Identifier * Shipment Identifier * Unit of Measure 	<p>With PREVIOUS Trading Partner</p> <ul style="list-style-type: none"> * Receiver Identifier * Ship To Location Identifier <p>With NEXT Trading Partner</p> <ul style="list-style-type: none"> * Output Lot Number * Output Product Identifier * Product Description * Quantity * Sender Identifier * Ship From Location Identifier * Shipment Identifier * Unit of Measure

Legend
 Red Text: Previous Trading Partner
 Blue Text: Both Trading Partners & Your Own
 Grey Text: Next Trading Partner
 Dashed line: Supply Chain Flow



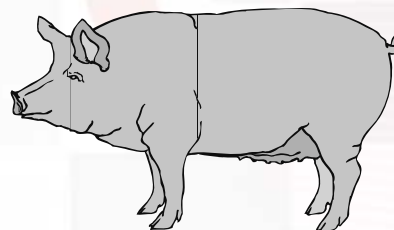
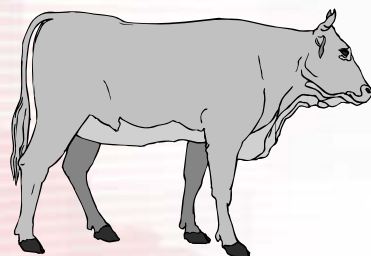
Secretariat Role: GS1 Canada



- ▶ GS1 Canada Mission: provide leadership in establishing, promoting, and facilitating global collaborative commerce
- ▶ Standards, services and education
- ▶ Existing partnerships with food processors and retailers

Can-Trace: Published Materials

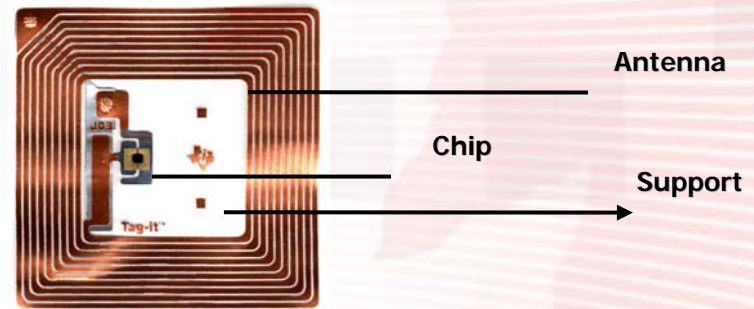
- ▶ Canadian Food Traceability Data Standard, v 2.0
- ▶ Pilot Projects



- ▶ Business Case “Decision Support Tool”
 - ▶ Self assessment excel tool (with drop-down menus)
 - ▶ Determines cost/benefit for traceability investments

Can-Trace: Published Materials

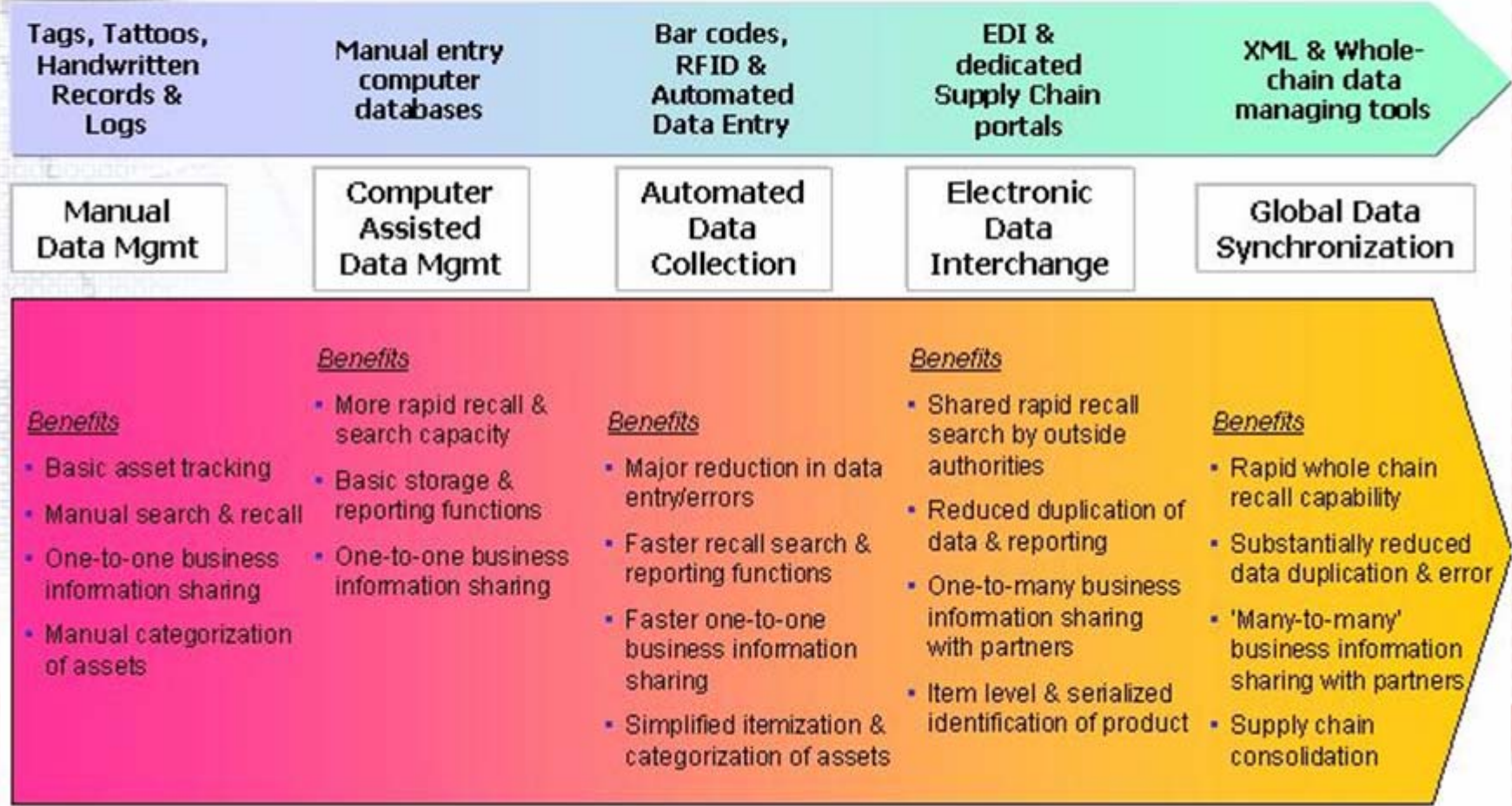
▶ Technology Guidelines Report



- ▶ *How* should the data be transmitted?
- ▶ Range of technology approaches for product data capture and document exchange
- ▶ Identify how physical markings and documents (paper-based or electronic) can be used to capture and communicate data
- ▶ Capabilities of different applicable technologies



Continuum of Traceability Technology



Increasing Value Chain Synchronization



Can-Trace: Published Materials

▶ Multi Ingredient Products Report

- ▶ Food Manufacturers/Food Processors using most of the Can-Trace data elements, but not consistently
- ▶ No unique requirements; no modification to standard required
- ▶ The most successful companies were implementing EAN.UCC/GS1 best practices
- ▶ Breakdowns in traceability occur when suppliers not providing proper documentation



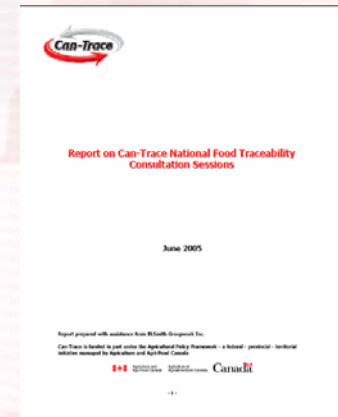
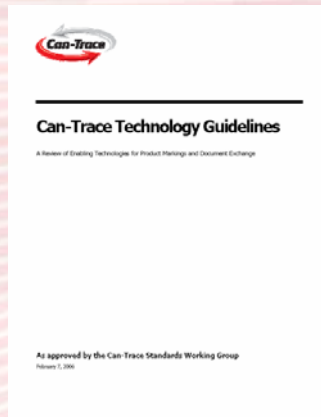
Can-Trace: Published Materials

▶ Integration Guidelines Report

- ▶ How well does the Can-Trace Standard work "upstream"?
- ▶ Were there gaps? What were they?
- ▶ Gap Analysis: Can-Trace vs Other food safety/quality/HACCP programs;
- ▶ Modifications were required: Can-Trace needed to be more generic

Can-Trace: Published Materials

- ▶ Reports available at www.can-trace.org



Lessons Learned

- ▶ When building a standard, be generic as possible
- ▶ Larger companies using most of the Can-Trace data elements but not in a consistent fashion
- ▶ Voluntary environment represents biggest challenge for wide adaptation of any standard

Lessons Learned

- ▶ Some controversy is inevitable!
- ▶ Small/Medium size enterprises [SME's] have great interest in learning from those who have implemented successfully
- ▶ Communicate, Communicate, Communicate

The Future...

- ▶ Emphasis needs to be on implementation
 - ▶ “How” to trace; not just “what” to trace
- ▶ Consistency with Global Standards [GS1, ISO]
- ▶ Partnerships with service providers to educate, train and implement systems
- ▶ Initiative will be industry-funded



Thank you!

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