Overview

- Mega trends: their impact on the food industry
- Traceability defined
- Global Food Traceability Center
- Lessons learned from our work
- Examples of traceability enabled success
- Interoperability: next phase in food traceability
- Conclusions
Factors impacting every business in the food industry

Environmental influences
Consumer influences
Impacts of globalization
Impacts of technology

No business is immune from these forces

Every business involved in the food system impacted by...
Combined Effect…..

- Every business now competes in two worlds
  - Physical world of products, processes and markets
  - Virtual world of information and knowledge
- Consumer power reaching back through entire systems supplying goods to markets
  - Seeking specific responses to specific needs/wants
- Events around the world impact businesses
  - Faster than ever before
  - To a greater extent than ever before
- Changing the means by which customers and suppliers can secure/retain sustainable competitive advantage
  - Trading behavior lessens ability to innovate, manage risk

Changing Source of Competitiveness

- Competitiveness once came from the process of transforming one product into another
- It now comes from analyzing the information that comes from that transformation process…
- …and using that information to continually improve processes in relation to customer and consumer demands

Porter & Millar, 1985
Traceability Defined

- Systematic ability to access any or all information relating to a food under consideration, throughout its entire life cycle, by means of recorded identifications

- Traceability is not about technology (e.g. RFID tags, bar codes, identifiers, standards, etc.)
  - They are critical enablers, not the purpose.

Global Food Traceability Center

Established by Institute of Food Technologists (IFT), who work to unlock the potential of the food science community by creating a dynamic global forum where 18,000 members from over 100 countries can share, learn and grow.

Vision

To become the global resource and authoritative voice on food traceability.

Mission

A program to serve the agriculture and food sectors, by providing applied research, objective advice, and practical expertise about data collaboration and food product traceability for business benefit and public good.
GFTC Sponsors

Organizational Structure

Food Industry
Regulatory Agencies
Consumers
Academia
National & International Organizations
Foundations & Non-profits
Solution Providers

Founding Sponsors

Advisory Council

Key Stakeholders

GFTC

Contributing Partners

Project Working Groups

Research

Education and Training

Protocols and Standards

Technology Transfer
Business Platforms

- Engaging stakeholders in the development and delivery of solutions

Global Food Traceability Center

Research

Protocols and Standards

Education and Training

Technology transfer

Project to Develop an Interoperable Seafood Traceability Technology Architecture: Issues Brief

Yuji Hatamura, Chris Crouch, Berenice Dietz, Martin Gauthier, Alex Jones, Nounita Niamah, Janine Stirling, Gil Sylvain, and Jianping Zhang

Abstract: The Interoperable Seafood Traceability Technology Architecture Issues Brief reflects the growing need to establish a global, secure, interoperable systems for seafood traceability. Enabling effective traceability systems relies on the development of a coherent and consistent approach to the delivery of information technology infrastructure, capabilities, and functions. The ability of systems to validate traceability for commercial goods is heavily influenced by the supply chain in which they operate. The Issues Brief describes factors associated with interoperable traceability systems that will impact the choice of technology architecture suited to enabling whole chain interoperable traceability. The Brief details why technology architectures is required, what is means for industry in terms of benefits and opportunities, and how the architecture will enable technology-linked practical results. The current situation of many heterogeneous proprietary systems present global interoperability challenges in seafood traceability. Utilizing primary research and lessons learned from other industries, the Brief details how the present situation can be addressed. This will enable companies to better understand the benefits of interoperable traceability systems and how this can be achieved by establishing a common language (taxonomy). The report concludes with a set of recommendations that industry can use to design a technology architecture suited to enabling effective global interoperable traceability.

Keywords: architecture, chain, interoperability, seafood, semantic, supply, system, technology, traceability, value

Assessing the Value and Role of Seafood Traceability from an Entire Value-Chain Perspective

Kathleen Keyserling, Martin Gauthier, Benjamin De, Nicole Massicott, Alexander Miller, and Gilbert Sylvain

Abstract: This paper reviews and synthesizes current research on seafood traceability and its implications for the seafood industry. It provides information on the current state of research and identifies gaps in knowledge. The paper also discusses the potential benefits and challenges associated with implementing seafood traceability systems. The research aims to contribute to the development of a comprehensive understanding of seafood traceability and its value for the industry. The study is expected to support decision-making in the seafood industry, particularly in the context of sustainability and consumer demand. This research is expected to contribute to the development of effective traceability systems for the seafood industry, which is increasingly valued by consumers and businesses.

Keywords: seafood traceability, consumer survey, quality, returns on investment

Learning from Australia’s Traceability and Meat Standards Program

Beef Farmers of Ontario

The effectiveness and value of any traceability system is ultimately determined by the system itself and the rigour with which it is applied. Both factors must exist for a traceability system to succeed in enabling businesses to increase their profitability and an industry to protect its competitive interests.

TRACEABILITY IS FREE

Competitive Advantage of Food Traceability to Value Chain Management

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Five Lessons Learned

- Traceability means increased liability
- Traceability means lost confidentiality
- The cost of traceability is high
- Traceability is only of value for regulators
- Traceability is a technology problem
- Traceability reduces risk exposure & liability
- Traceability means transparency
- Traceability is free – it reduces costs & raises margins
- The business value of traceability is higher
- Traceability is a business opportunity

Implications for Commercial Business

1. Business’s perceptions about purpose and role of traceability are rapidly changing
2. Business’s size has relatively low impact on its ability to capture value from traceability
3. Attitude determines which businesses derive most value from traceability systems
4. Primary value of traceability is reducing costs and risks, not short-term revenue increases
5. ROI from traceability relies on exchange of reliable, relevant, readily accessible information
6. Characteristics of the value chain influence the value that businesses can derive from traceability
Value Chain Characteristics *(How, Why, What)*

- Fragmented
- Cooperative
- Coordinated
- Collaborative

Why Chain Structure Determines the Potential Value of Traceability

Basic traceability is most important when business relationships are transactional and distrusting.

Opportunities to maximize the value of traceability occur when business relationships are trusting and collaborative.
Profiting from Traceability

“It is about removing costs by eliminating the need to dispose of poor quality that does not meet market demands, giving people incentive to produce according to market demands, and reducing wasted efforts along the chain.”

Profiting from Traceability

Meat Standards Australia

- Whole of chain industry-driven government enabled program

Producers
35,000 registered producers

Processors
51 licensed processors

End users
2,700 outlets
Full Recording of Animal Movements

- Enables eating quality to be predicted by carcass weight, age, breed, meat colour, rib fat, cut, pH level
- NLIS enables breeders/producers to access carcass data for collation and analysis in making informed decisions
- NLIS and NVDs ensure rigor, continual improvement

Capturing Added Value

- Enables eating quality to be predicted by carcass weight, age, breed, meat colour, rib fat, cut, pH level
- NLIS enables breeders/producers to access carcass data for collation and analysis in making informed decisions
- NLIS and NVDs ensure rigor, continual improvement

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Certified Inspectors, Feedback

“Without NLIS, MSA could not have achieved the outcomes it has.”
Matthew Lester, Cow-calf Producer

MSA Grades

Fail

3 ★★★★

4 ★★★★☆

5 ★★★★★

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Consumer Communication

How to identify MSA product

What eating quality level do you want?
What cook method you intend to use?
How long do you intend to age the product for?

Woolworths
Australia's fresh food people

Like yours tender, juicy every time?
Look for the Meat Standards Australia symbol.
Success: Simple, Solid, Secure

- Determined purpose before operation and design
- Traceability is the outcome, not the purpose
- Independent management, government enabled
- Extensive testing and mandating of technology
- Accountability rests with individuals, not entities
- Enforcement more by carrot than by stick
- Costs borne by entire industry through levies
- Accurate rigorous data collection and analysis
- Leadership and collaboration
- Proven role in enabling informed management

The Future: Interoperability

- Interoperability
  - Extent to which two or more separate systems can exchange data, and interpret that shared data to help users make more effective decisions

- Benefits
  - New or improved products and services,
  - Innovative forms of business cooperation
  - More effective value chain management
    - US automotive: $493 million in inventory, chain coordination
    - US Food: transaction costs ≥ entire industry’s margins
Learning from other industries

- **Finance**
  - Society for Worldwide Interbank Financial Telecommunication (SWIFT)
  - ISO 20022: impact assessment and solution design.
- **Travel**
  - OpenTravel Alliance
  - Open standards, member-driven working groups
- **Produce**
  - Produce Traceability Initiative (PTI)
  - Common nomenclature for product ID, common numerical ID system
- **Automotive**
  - Automotive Industry Action Group (AIAG)
  - Supply safe and Global Materials Management Operational Guidelines/Logistical Evaluation

What we do NOT want to do…

![Image: How Standards Proliferate](http://imgs.xkcd.com/comics/standards.png)
Overview of Traceability Architecture Project

- **Project Purpose**
  - Design a technology architecture suitable to the seafood industry and develop a **rollout strategy**
  - Provide supporting **communications, education and training** needed to accelerate understanding of the need for a common blueprint and collaborative strategy for an interoperable global seafood traceability system

Overview of the Traceability Architecture Project

- **Interoperability reduces costs and burden of risk**
  - Lowers need to meet multiple, duplicative data and systems requirements
  - Helps automate electronic data exchange
  - Addresses common terminology

- **Like a blueprint, it is a framework: does not require “sameness”**
  - Built on “shared” principles . . . . and
  - Flexible enough to embrace the diversity of business systems being used today
  - Considers what already works
Overview of the Traceability Architecture Project

- Interoperability must be balanced by principle of managed or controlled access
  - Just because information is stored does not mean that it is “accessible to anyone”
  - Data integrity = security and validity

- Central concept
  - No matter what kind of information system stakeholders may use in their own organizations
  - Systems can communicate and be understood by other authorized systems through interoperability
  - Presumption of use by trusted parties

Overview of the Traceability Architecture Project

- Leverage: “Stitch together” dispersed data to provide a more complete view of seafood traceability – Data agnostic

- Leverage: Use existing business systems and transactional data (through standardized protocols and secure access) to deliver relevant, reliable and readily accessible information

- Leverage: Businesses that already have mature electronic data management systems encouraged to participate in early pilots so that implementation reflects current capabilities of industry, while maintaining flexibility for future alternatives

- Leverage: Existing software vendors will need to accept the use of uniform requirements
Architecture Project:
Issues Brief

1. Term “traceability” typically misunderstood by industry stakeholders.

2. Realizable value to businesses and wider industry not met for a multitude of reasons.

3. Lack of a common ontology just one stumbling block preventing interoperable traceability.


5. Stakeholder disconnects: interests & agendas vary, communication asymmetries result in lack of common understanding.

Achieving Full Interoperability
= evolving process
**Conclusion**

- Mega trends both driving and enabling traceability
  - Most valuable when viewed as outcome, used strategically
  - Produces otherwise unattainable insights and opportunities

- Successful enterprise and industry level initiatives
  - Barrier: concept of traceability not well understood
  - Enabler: attitude ≥ than size and sophisticated technology

- Success relies on a shortlist of common factors
  - Simple, solid, secure
  - Leadership, governance, purpose; then technology

- Interoperability: the future of value enabling traceability
  - Food industry benefiting from other industries' experience
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Thank you.