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Issues and practical experiences from chain traceability implementations

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TraceTracker

A trusted partner in protecting and enhancing the value of any business

With over 50 experts in 11 offices in Asia, Europe and North America, we can immediately respond to your needs.
Traceability with TraceTracker

GTNet
The Global Traceability Network
via the Internet

TT Navigator

producer of raw materials | supplier | manufacturer | retailer | consumer
Agenda

- What was the ambition?
- What have we learnt?
- Where could we be heading?

All data in this presentation is collected from our practical experiences in promoting and implementing traceability solutions to the food sector globally.
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Today’s Cascade-up/Cascade-down traceability

Point-to-point traceability inquiries are *slow and costly*!
The two levels of traceability

**Enterprise Traceability** is the ability to track and trace movements and risks associated with products and ingredients *within the company* and to communicate essential data to authorized parties.

**Value Chain Traceability** extends the above capability *across all the players in the supply chain* by linking the information about related products and ingredients.
Internally

Within a CP company, different solution components must work together to make the necessary traceability information available.

- Keeps track of data and makes it searchable
- Structures and gives meaning to data
- Generate or capture data

Enterprise Traceability Network

ERP

Lab & Safety Systems

Factory Database / MES

Shop Floor Equipment

CP Manufacturer
Externally

Across the value chain, each trading partner collects and stores information and all parties share information through a secure network.
The desired insight... (or transparency)

.....A complete history of an item represented in a fast, secure and accurate way and viewed over the Internet and other channels by all authorized parties within any food supply chain......
The ambition

- **What Chain?**
  - Internal? Yes; to document the relationship between incoming raw materials and finished products
  - Between independant companies? *That’s the new dimension!*

- **What transparency?**
  - End to end; for authorized parties

- **What information?**
  - Traceability keys, supplier/buyer names and timestamp
  - Other information to be defined by the actors, industry and authorities

- **How fast and at what format?**
  - Self serviced at your fingertips
  - Digital format

- **Why traceability?**
  - Started with food scandals. *Where is the business value?*
Core: Effective Electronic Linking of Traceable Entity IDs all along the chain

For each member of the chain the traceability solution must:
- link incoming TradeUnit ID with first internal Batch ID
- link internal Batch IDs through any transformations
- link last internal Batch ID with outgoing TradeUnit ID

The traceability solution must incorporate the transformations at each stage of the chain. This is achieved by using the TradeUnit ID’s and Batch ID’s as traceability keys.
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Hot stuff – on everybody’s lips

• **Traceability?**
  • Yeahh, I have it!
• **Electronic?**
  • Well….
• **Chain traceability?**
  • One up/one down
• **But…, where is the instant chain transparency?**
  • No regulative requirements
  • No customer requests
  • So, why do it…..?

-> Quite foggy right now; the industry has just started walking the talk…. The speed of the ”walking” will be determined by the perceived business value by the industry
Overall Observations

- **Complex subject**
  - Inter company relationships and cooperation in long chains
  - The more end-to-end, the more value
  - Crosses national and continental borders
  - For everybody
  - Business vs Regulative forces
  - High volume, requires support from IT
  - Missing proven principles

- **Traceability keys**
  - Standards like GS1 exist, but not in use (especially at primary level)

- **Fragmented competence, lack of practical experiences and common vocabulary**

- **Challenging data capture**
  - Custom solutions because of all kinds of datasources

- **Requires internal traceability**
  - Linking incoming raw material with finished product

- **Resources (access, priority, expertise)**
Balancing Traceability Investments and Returns

Whole-chain Traceability

Costs

Internal Traceability

Value

Balancing Traceability Investments and Returns
Key improvement areas

Most common weaknesses evident in recent consumer product recalls*

1. Manual processes dominate data collection
2. Processes not standardized nor effectively monitored
3. Critical information missing, especially upstream
4. Data elements not standardized
5. Relevant data stored in disparate systems
6. Data collected not aligned internally
7. Limited ability to track / trace outside own four walls

*IBM Institute for Business Value 2008 analysis
Update from Asia – ”Where is the business?”

- **No interest by the industry in “traceability”**
  - A public sector issue for governments to handle

- **What the industry looks for:**
  - More efficient supplier management
  - Risk management
  - Market access (including customer acceptance that product is sustainable, safe, ethical etc)
  - Better prices
  - Lower sourcing cost without increased risk
Where is the Business Value?

- **How does traceability**
  - Increase sales?
  - Cut cost?
  - Reduce risk?

What are the best benefit scenarios where traceability related documentation can contribute?

An invitation to this community:
Analyse and document what traceability related documentation that originates outside one business unit/company should get linked with and add value to a company’s own business data.
The practical approach

1. Define specific objectives for a traceability system by documenting initial traceability scenarios and their desired benefit.
2. Start with a project with well defined scope and clear benefits.
3. Engage all other stakeholders involved and create a shared vision
4. Assess the current state and define gaps in your ability to track and trace these products internally and across the necessary trading partners
5. Define data requirements and agree on data standards with trading partners
6. Identify the technology solution for traceability as part of your overall corporate Information Architecture, using proven principles of data management and traceability systems
Who ”builds the future”? 

Bottom-up Approach: Individual company and Application focus

**Bottom-up: Individual Firms**
- “Early Adopters”
- On the radar screen of Major Players
- International marketing / sourcing
**Middlemen: Multipliers**
- “Link-based” business model
- Focus on Major Players and their value chain
- Value-added marketing / sourcing

**Top-down: Whole Chain**
- Anchored by Province and/or Industry Sector
- Partial public seed funding
- “Low risk” approach (technology platform, stepwise commitment)
- Platform for exposure / PR / lead generation

Top-down Approach: National / Sector
Key considerations for success

- Recognize that Traceability is a complex, strategic undertaking
- Establish clear executive level and functional responsibility and sponsorship
- Involve business and IT staff from the beginning
- Adopt an evolutionary path for process, capability and tool development
- Create a shared Traceability vision and develop a roadmap with vendors and suppliers
### Key questions for planning an implementation

- Business ambition
- What information to communicate?
- Target audiences?
- Channels for communication?
- Chains and actors involved?
- Traceability level, traceable units?
- Current traceability gaps?
- Current identification codes in use?
- Where is the data?
Today's business needs

Traceability

Product/Brand Value

Product/Brand Characteristics
- Taste
- Appearance
- Packaging
- All natural
- Free range
- Organic
- Sustainably grown
- Whole grain
- Probiotic
- Lower cholesterol
- No trans fats

Product/Brand Protection
- Food safety: Withdrawal/recall systems

Product/Brand Compliance
- Legal and commercial market access requirements
Protect and serve your products/brands

**Protects**
- Counterfeits
- Recalls
- Non-compliance
- Contamination

**Serves**
- Market access
- Organic
- Lowers cholesterol
- Sustainably grown/
- Eco-packaging
- CO² emissions
- Fair trade

*Traceability*

*Product / Brand*
"Simple is beautiful!"

- **Successful data capture relies on simple data models**
- **Focus on the strictly core traceability needs**
  - the ability to identify the traceable entities with unique keys
  - the ability to link between the entities
  - at the incoming and outgoing steps in the internal chain - a standardized way to communicate upstream and downstream
Cooperation and win-win

1. **Openness between trading partners to be open to each other.**

2. **External guidance on defining traceability keys and how to apply standards**
   - The upstream link should set the agenda, and the next link must then be able to use and store the data the supplier used.
   - Customers could recommend their standards to their suppliers, but not throw them at them.
   - Use existing ID’s whereever possible, apply ”ideal” standards in a phased approach.
     - Example: GLN is easy, GTIN could be challenging with upstream suppliers…
"No chain is stronger than the weakest link"

- Many companies are not yet able to do automated data captures, use RFID, use GS1 barcodes or whatsoever.
- They should still be able to supply their data to the traceability systems.

✓ Base the traceability systems on simplicity rather than perfect principles. Standards are good, important and useful for those being able to use them, but supply alternatives for those who are not!
Critical factors for successful traceability solutions

- Unique identification of TradeUnits
- Cross-chain repository of TradeUnit relationships
- Global support (ref import, export)
- Use of standards
- Support all types of food
- Usability for both small and large actors
- Usability for both up- and downstream actors
- Trust in the data
- Information easily and fast accessible
- One external channel: Connect once, connect to all!
- Each actor owns their own data and other’s access to them
- Data stays where they were registered originally
- Data communicated only to authorized receivers and as agreed
- Data protection via authentication, encryption and secure transfer
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Building transparency

- New campaign by Skretting
- Connects with trading partners to build an aquaculture chain of custody
- Has made its own traceability documentation available on the GTNet
- Ready to run solution for the trading partners
Customer testimonial: Skretting

"Each of our feed batches has a unique number which links with the specific raw materials and the supplier. It also links with the customers that received feed from that batch.

The end result is that anyone with access to the TraceTracker GTNet will be able to use an identification number for salmon at the retailer or restaurant to access comprehensive information back through processing to harvesting, farming and the hatchery, all the way to the feed, including the origins of raw materials."
Press release, Stavanger 4 March 2008

Skretting invites the seafood industry to join the global traceability network

Skretting invites the entire aquaculture industry to join a new traceability network that covers the whole of the seafood production chain. The new system will be presented at the North Atlantic Seafood Forum in Norway this Wednesday.

Skretting has been co-operating with Trace Tracker Innovation, who have developed a new, electronic tracing and tracking highway for the entire seafood value chain. Skretting now wants other companies in the industry to join the network.

Hans Abrahamsen, Managing Director in Skretting said: "We have registered our tracing and tracking data in Global Traceability Network (GTNet®) and invite the whole seafood industry to do the same. The new system will be presented at a seminar in the North Atlantic Seafood Forum this Wednesday."
Catch certificates – the Commission has finally turned

**New draft proposal May 15th 2008:**

- The Commission received criticism to its original proposal
- Too complicated to manage the paper based certification system – for the producer, the manufacturer, the retailer, the exporter and the EU-importer
- Now they open up for electronic traceability as a tool to combat IUU
- A catch certificate "may be established, validated or submitted by electronic means or be replaced by electronic traceability systems ensuring the same level of control by authorities"
Consumers want seafood they can trust

They ask many questions before making a purchase.

Is this healthy?

Does it contain any allergens?

Is the packaging recyclable?

Is it safe?

Was this grown organically?

Where was it produced?

Is it legal?

Are the employees treated well and paid fairly?

Is the farming and harvesting done in a sustainable fashion?

Can I trust this brand?
The next major innovations in our life

IBM's 2nd annual Next 5 in 5 is our forecast of the five innovations that will change the way we live, work and play in the next five years. Our predictions range from super-smart cell phones to total traceability of everyday foods. The five innovations selected were based on projects in our research labs, insights from our business think tank and ideas from employees around the world.

This year’s predictions pick up some threads from last year—a continued exploration of the use of avatars, increasingly sophisticated mobile phones, and nano technologies to address environmental concerns.

Get a PDF of this story (236KB)
You are what you eat

Your food will have a digital passport:

Eat an apple today and you know it came from the grocery store. Eat an apple five years from now and you could know it was grown on a 5th generation Cortland apple tree in Oregon, was never treated with pesticides, was picked on July 6th, traveled by air-conditioned truck to your local farmers’ market and has 65 calories.

Your food will have a digital passport: Using second-generation barcodes, wireless tags like RFID, and specialized sensors, you will have access to detailed information on your food from its origins and transportation conditions to its final destination. Additionally, you will know how its production impacted the environment, so you can make purchasing decisions based on how eco-friendly products are.

Your shopping cart will be smart: When you put an item in your shopping cart, it will read the digital passport of your food using a network-connected device. For example, if you are on a diet that calls for grain-fed meats, you can find that information instantly by simply placing a package of meat in your cart.

Loyalty cards will become an early warning system: Using loyalty cards, grocers will be able to instantly tell you—by e-mail, text message or phone call—when items are recalled, alerting you that the food in your refrigerator should be tossed and crediting your account.
Thank you.
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