

Why Do You Need Traceability Systems?

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Why Do You Need Traceability Systems?

- Recent foodborne illness outbreaks and traceability failures
- Potential consequences of intentional contamination events and traceability system weaknesses
- Characteristics of effective traceability systems
- Public, customer and stakeholder expectations

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Topp's and Ineffective Traceability Systems

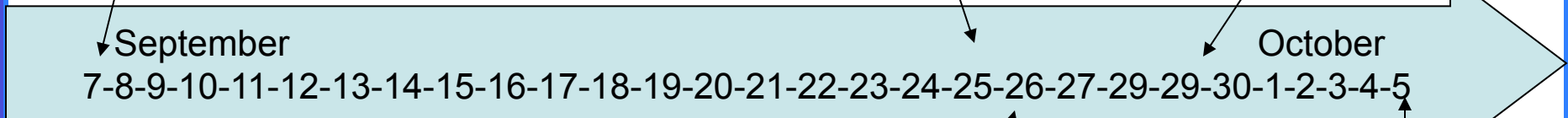
- One (or more) receipts of beef trim contaminated
- Traceability system ineffective – all production recalled
- Largest meat recall at the time – 21.7 million pounds of beef recalled
- Company goes bankrupt as a result of the recall

Topps Timeline



First product positive

Recall Expanded



First suspect illness occurred July 5th

Ground Beef Production Stopped

Topps Declares Bankruptcy

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Inconclusive Epidemiology & Limited Traceability Systems

- Initial epidemiology data suggested tomatoes, but was not exclusive of peppers
- Private sector, agriculture production data and import data not entirely consistent (or real time) with presumptive epidemiology data
- Initial alert/restrictions on tomatoes negatively impacted domestic tomato industry by ~\$100 million (or more)
- Final source attribution took months

Epidemiology and Complicated Supply Chains

> 500 producers in Mexico Sourced Peppers to U.S.



>320 importers in Mexico Imported Peppers to U.S.

>340 Consignees Received Peppers from Mexico



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Consignees of Mexico Sourced Peppers March-June 2008



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Source & Destination Traceability Complexity

- Peanut Corporation of America supplied <2.5% of peanut products in the U.S.
- The largest recall in U.S. history
 - ~360 recalling firms
 - 3,900 individual sku's
- The most expensive recall in U.S. history
 - Kellogg's alone recalled 7 million cases of products worth \$65 million
 - Industry estimates of total costs are in the billions

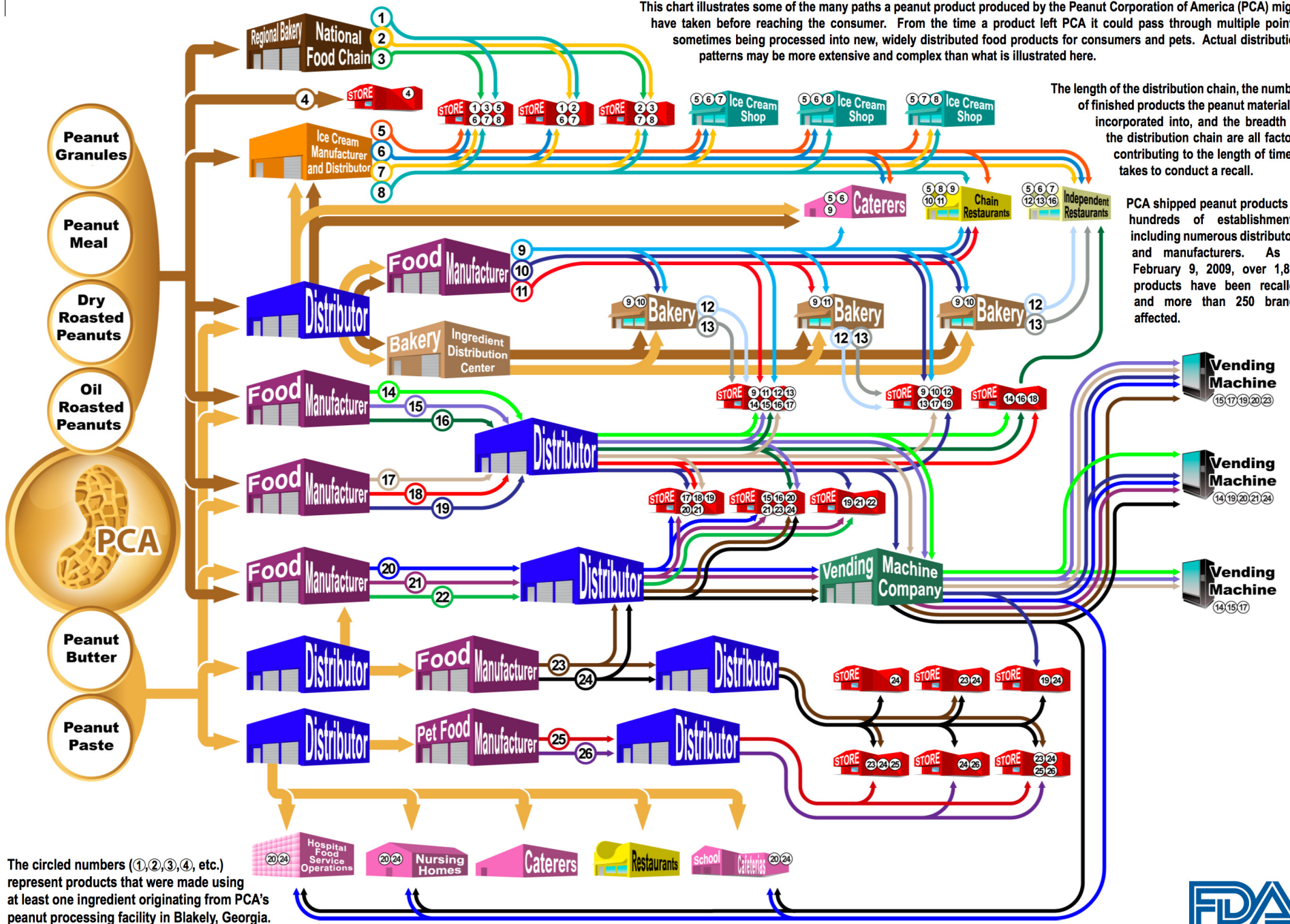
Source & Destination Traceability Complexity

- One step forward/one step back did not enable anything close to real time identification of potentially contaminated products
 - Complicated supply chain
 - Primary ingredients further processed
- Time from first recall to most recent spans months
 - Recalls continued 40 days after facility closures

This chart illustrates some of the many paths a peanut product produced by the Peanut Corporation of America (PCA) might have taken before reaching the consumer. From the time a product left PCA it could pass through multiple points, sometimes being processed into new, widely distributed food products for consumers and pets. Actual distribution patterns may be more extensive and complex than what is illustrated here.

The length of the distribution chain, the number of finished products the peanut material is incorporated into, and the breadth of the distribution chain are all factors contributing to the length of time it takes to conduct a recall.

PCA shipped peanut products to hundreds of establishments, including numerous distributors and manufacturers. As of February 9, 2009, over 1,800 products have been recalled and more than 250 brands affected.



The circled numbers (1, 2, 3, 4, etc.) represent products that were made using at least one ingredient originating from PCA's peanut processing facility in Blakely, Georgia.



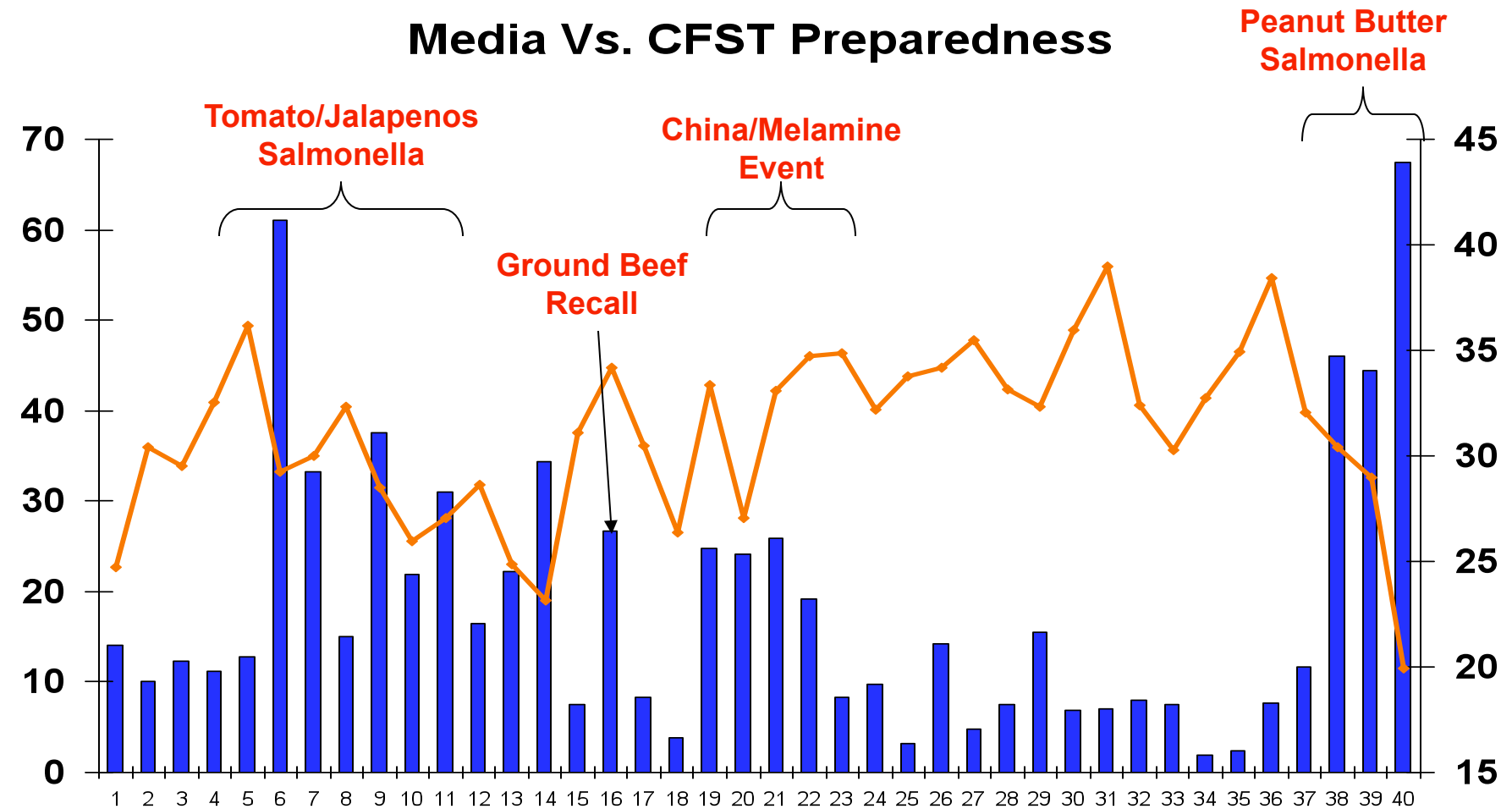
Long Shelf Life Ingredients

- Chili powder entering Europe required Sudan-1 certification since 2003
- February 7, 2005 Food Standards Agency (FSA) notified of a Premier Foods product positive
- February 17 FSA announces 359 products contaminated
- February 24, 474 contaminated products identified
- March 8, FSA finalizes contaminated products list at 580

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CFST Preparedness in Food System May 2008 - February 2009

Media Vs. CFST Preparedness



Dennis Degeneffe & Jean Kinsey
University of Minnesota

MEI CFST Preparedness

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Customer Expectations

- Suppliers provide safe products
- Suppliers know where the ingredients in their products come from
- Customers can trace back to their immediate supplier
 - Enables transfer of liability
- Risk and liability is shifted upstream as much as possible
- Recalls will be expanded to the limit of validation

Consumer Expectations

- Companies provide safe products
- Companies know where the ingredients in their products came from
- Companies can recall/control a product as soon as contamination is suspected or identified anywhere in their supply chain

Consumer Expectations

- Traceability correlates with product safety
- Traceability is recognized as having an economic impact
 - Consumers don't know what the impact is
- How traceability is accomplished is not important
 - Need to know it is safe/traced to source
 - No real need (or interest) in knowing how that is done

Topp's – What If It Had Been Intentional?

- Daily ground beef production ~60,000 lbs. or 240,000 servings
- Labeled shelf life (~90-120 days) vs. effective shelf life (as little as 7 days)
- Direct or process-aid contamination potentially effective for delivering an infective/effective dose of a an agent

Topp's – What If It Had Been Intentional?

- If first detection is first illness, hundreds of thousands of servings implicated
- Regulatory response at all levels will rapidly scale with illnesses
- Public confidence in the safety of all other food products fragile

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If It Is Intentional? Public Announcement/Recall Possibilities

- “A” is recalling product codes 11-22 due to potential intentional contamination. “Agency” has tested all other codes and has confirmed them as safe.
- Company A is recalling all products produced since XX due to potential intentional contamination. While the likely contamination is more limited, we are recalling all products in an abundance of caution
- Company A is recalling product codes 11-22 due to criminal contamination. No other products present any potential consumer health risk.

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Produce Contamination – What If It Had Been Intentional?

- *De facto* trade barriers remained for weeks
 - Illustrates the ability to disrupt international trade agreements through potential contamination
 - Inability to rapidly narrow the source contributed
- Actual reported illnesses suggest >80,000 actually ill
- Average individual shipments from the producer implicated contain 195,000 servings

Effective Traceability Characteristics

- Verifies the source, back to primary production, of all ingredients
- Identifies what products are – and are not – associated with a suspect ingredient
- Minimizes the time to identification
- Minimizes product not actually associated with the suspect ingredient because it can't be confirmed

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Why Do You Need Traceability?

- To protect public health
 - Rapidly reduce exposure to contaminated food
 - Reduce economic harm by limiting the scope of contamination events
- To protect the firm/supply chain/sector
 - Non-existent/ineffective traceability systems expose all to increased financial and operational risk
- To avoid potentially burdensome or ineffective regulatory requirements

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