

Fresh Produce Traceability Trends

An Industry Perspective

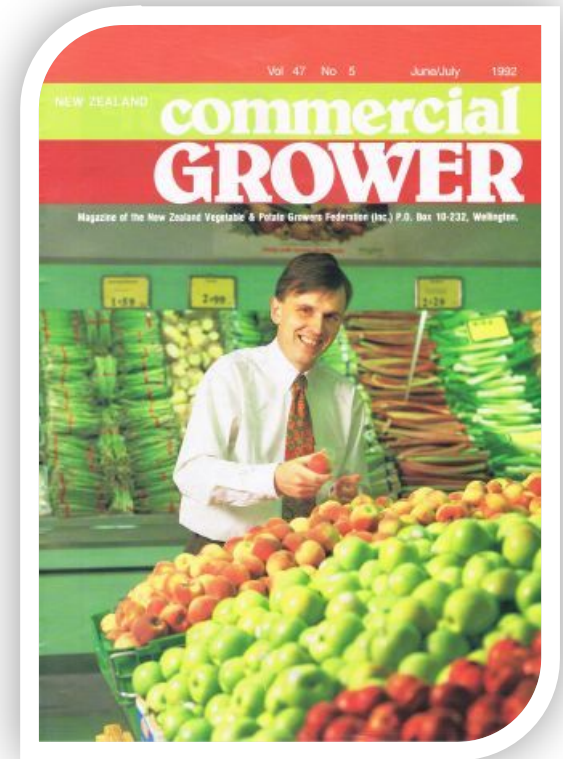


Dr Hans Maurer

October 2017

Who Is This Guy?

- Director Strategy & Marketing, The AgriChain Centre
- Chartered Member, New Zealand Institute of Directors
- Professional Member, Royal Society of New Zealand
- Member of the Economics Commission, International Society for Horticultural Science
- Member of the Executive Committee, United Fresh New Zealand
- New Zealand Director, International Federation for Produce Standards
- Chair, United Fresh Technical Advisory Group



My Misspent Youth 😊

United Fresh

United Fresh is the only pan-produce organisation in New Zealand.

Members include

- seed producers
- growers
- packers
- wholesalers
- marketers
- importer/exporters
- transporters
- retailers
- fresh cuts
- service providers



United Fresh
New Zealand Incorporated

United Fresh Technical Advisory Group

- Biosecurity
- Food Safety & Traceability
- Weights & Measures
- Industrial Gases
- Health & Safety



United Fresh
New Zealand Incorporated

The AgriChain Centre's Competence



- Food Culture Advice
- Food Safety & HACCP Training
- Risk Assessment & Analysis
- Food Safety Programme Design
- Internal Audits
- Implementation Support

NZ Produce Customers Shop At



Food Safety Trouble

Is Our Food Safe?
In principle, **Yes**

But when the principle
fails, **Trouble** starts



Food Safety - Principle

The desired outcome is
a **Healthy & Confident**
Consumer



Food Safety - Professionalism

- Consistently meeting Food Safety criteria that satisfy the consumer requires an **integrated Professional Approach**
- This can not be an added extra that we worry when we have done all our other work



Food Safety – What Could Go Wrong?

Plenty!



Spinach - US

August-September 2006

Fresh Spinach

Starting in August 2006, an occurrence of **E. coli** in **fresh spinach** sickened more than **200 people** in **26 US states** and resulted in the deaths of **five people**.



Lettuce - US

December 2006: Lettuce

In December 2006, E. coli was detected in lettuce and **sickened more than 700 people in five US states**, which resulted in the hospitalization of approximately eighty-six people.

Initially, green onions were mistakenly thought to have been the source of the E. coli leading one restaurant to **pull all its green onions from its 5,800 locations**.



Tomatoes, Jalapeno, Peppers – US

June-August 2008: Tomatoes, and Jalapeño and Serrano Peppers

Beginning in early June 2008, the FDA began warning residents in Texas and New Mexico that they should avoid eating certain types of tomatoes because they were linked to a salmonella outbreak.

By the time the investigation was broadened, 810 people in 36 US states had been sickened by the salmonella outbreak.



Pawpaw - WA

A SALMONELLA outbreak caused by bad fruit in WA has left one person in hospital (2009)

Health Department environmental health director Jim Dodds said **seven cases of salmonella associated with pawpaw** had been confirmed in WA over the past six weeks, hospitalising one person.

In light of these preliminary findings the Department of Health has advised consumers to follow simple food safety tips when handling pawpaw.



Alfalfa Sprouts - US

February-April 2009: Alfalfa Sprouts

In February 2009, Nebraska's Department of Health and Human Services began to identify an increase in the number of salmonella related illnesses. A series of interviews of the patients who became ill determined that the source of the salmonella came from contaminated alfalfa sprouts.

Ultimately, 235 people in 14 US states were sickened by the salmonella contamination.



Sprouts - Germany

2011: Cucumbers or Sprouts?

The toll of dead and seriously injured in more than a dozen nations is sobering: **The official death toll was more than 40 or 50, depending on the source.**

More than 4,000 fell ill—more than 800 of the stricken suffering from HUS, enduring brain and kidney complications that will likely afflict them for the rest of their lives.

Blame for the outbreak veered from Spanish cucumbers to sprouts from an organic farm in Germany and briefly back to cucumbers found in the trash of a German family, before officials settled on Egyptian fenugreek seeds



Blueberries – New Zealand

2002

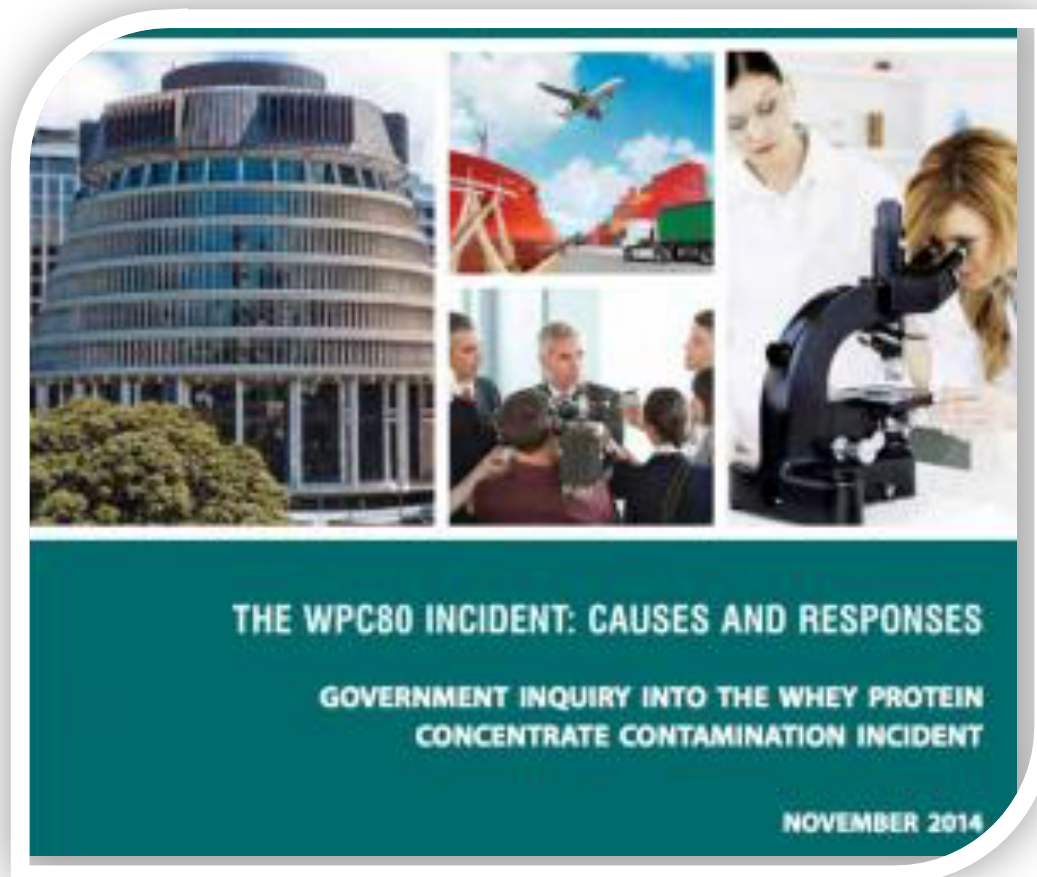
A Hepatitis A (HAV) outbreak occurred in New Zealand. Traceback of product through retailers and wholesalers implicated a single commercial orchard. Hepatitis A virus was detected by reverse transcriptase polymerase chain reaction in faecal specimens from cases as well as a blueberry product from the orchard.

There were 81 confirmed cases, 18 patients were hospitalized and 1 patient died.



Dairy Food Safety Incident 2014

False Positive
Botulism Incident 2014



? Produce ? 2014 New Zealand

About **170 people** contracted ***Yersinia pseudotuberculosis*** in September and October from what is thought to be bagged lettuce and carrots, and **72 people** needed hospital treatment.



MPI
@MPI_NZ

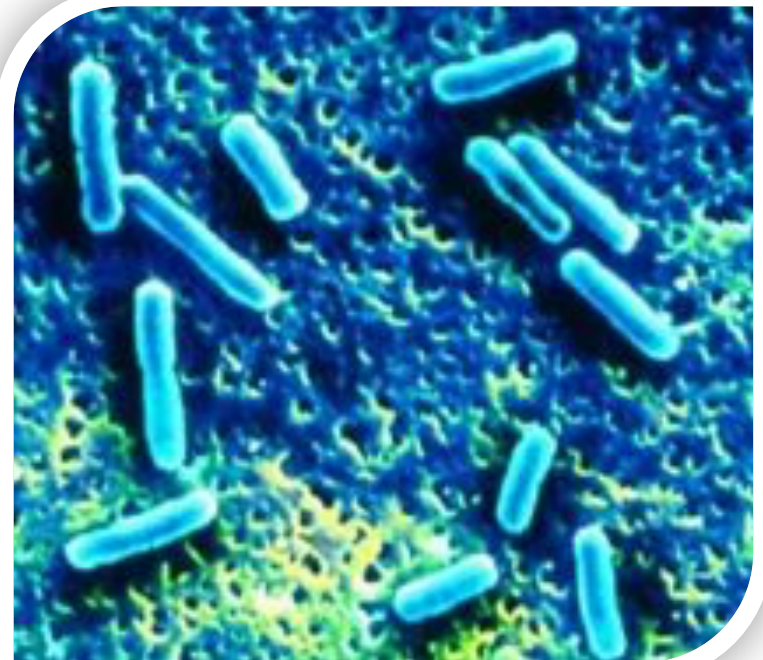


Follow

Yersinia bug, the source has not yet been identified. Advice for consumer here:

mpi.govt.nz/news-resources...

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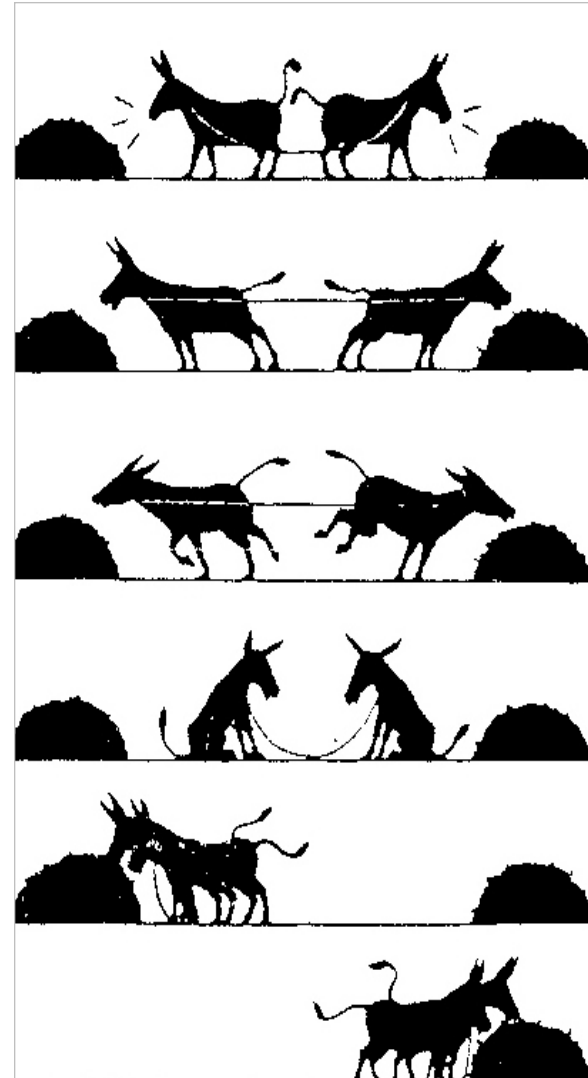
Food Safety – The Wrong Approach

Fulfilling consumer food safety needs leaves no room for **Confrontation**



Food Safety – The Right Approach

Meeting Consumer
Food Safety Expectations
requires **Co-operation**



The Fresh Produce Value Chain

There is an
Elephant in the
room!



Traceability



Traceability

WHY?

**Because
Shit happens!**



The Elephant In Close-up

Traceability

Internal Traceability

= confidential or proprietary data and processes companies use within their own span of operations to track/trace product

Most New Zealand produce industry participants are either compliant with or close to achieving internal traceability expectations

External Traceability

= the data exchange and business processes that take place *between* trading partners to track/trace product

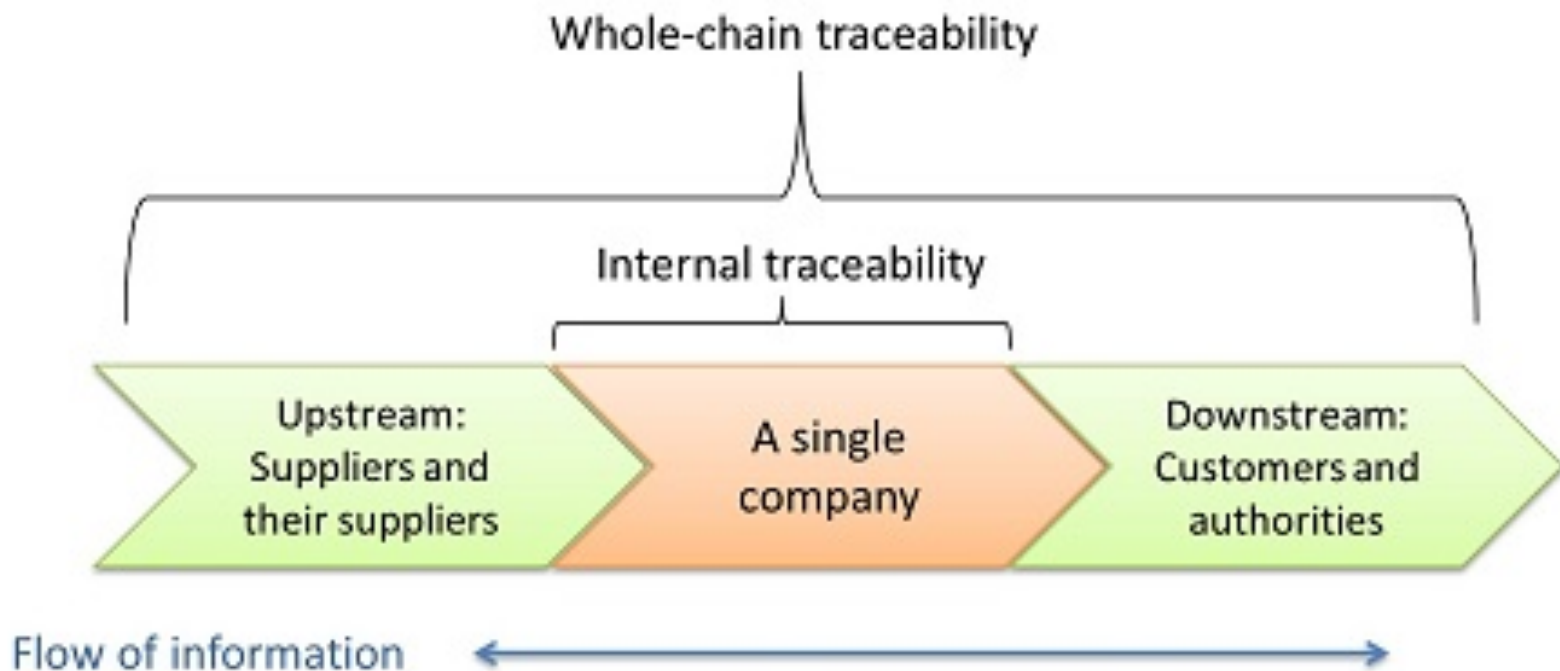
The area best described as 'work in progress' and 'in need of attention'

Whole-Chain Traceability

= Internal + External traceability

The whole of industry objective to meet future regulatory requirements, ensure consumer health, increase consumption, underpin consumer confidence & increase the value-add factor

The Elephant In Close-up



Traceability Nightmare

Strawberry Marketing Channels

- Supermarkets
- Greengrocers
- Open air markets
- Farmers markets
- Street vendors
- Grower roadside stalls



Auckland Strawberry Traceability Pilot



November 2015



United Fresh
New Zealand Incorporated



Food Safety & Traceability In The New Zealand Horticulture/Produce Industry

NZ Industry Bodies Objective:

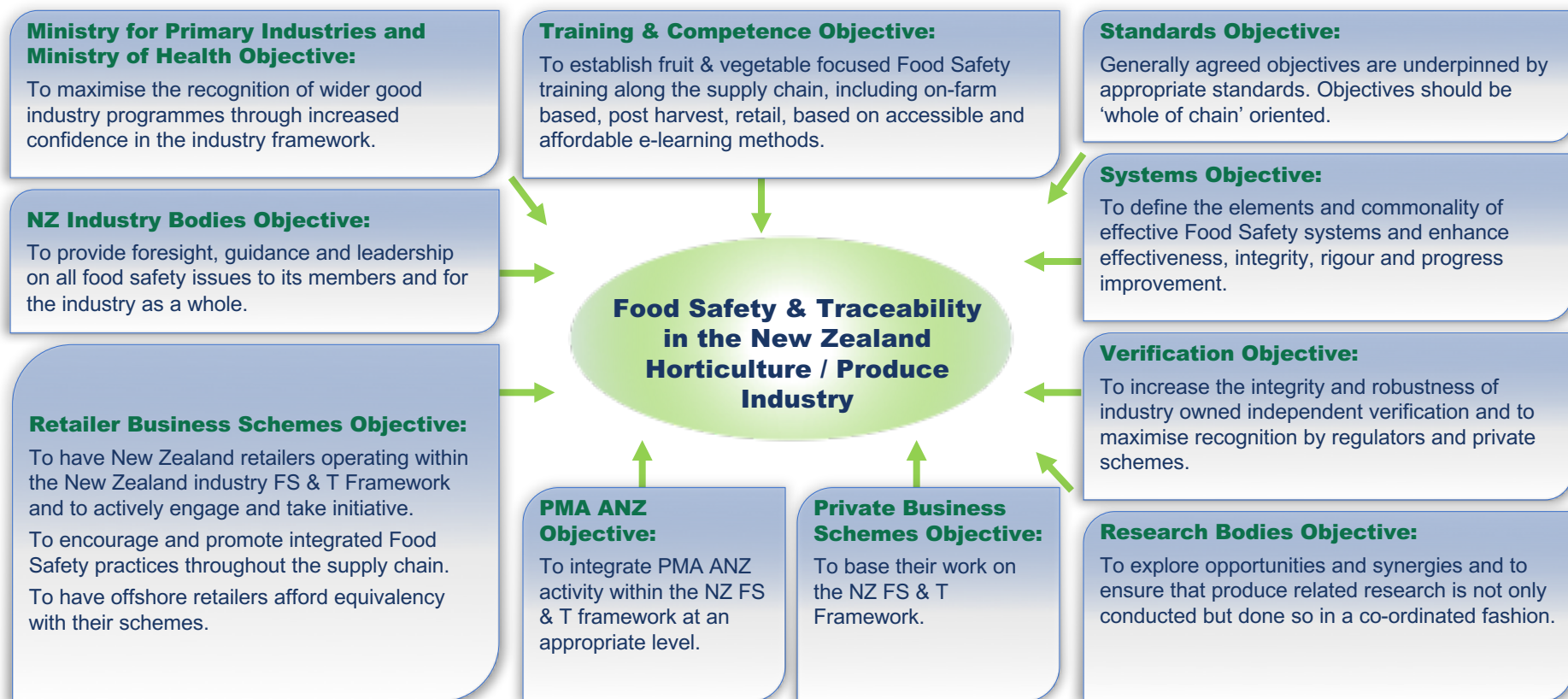
To provide foresight, guidance and leadership on all food safety issues to its members and for the industry as a whole.



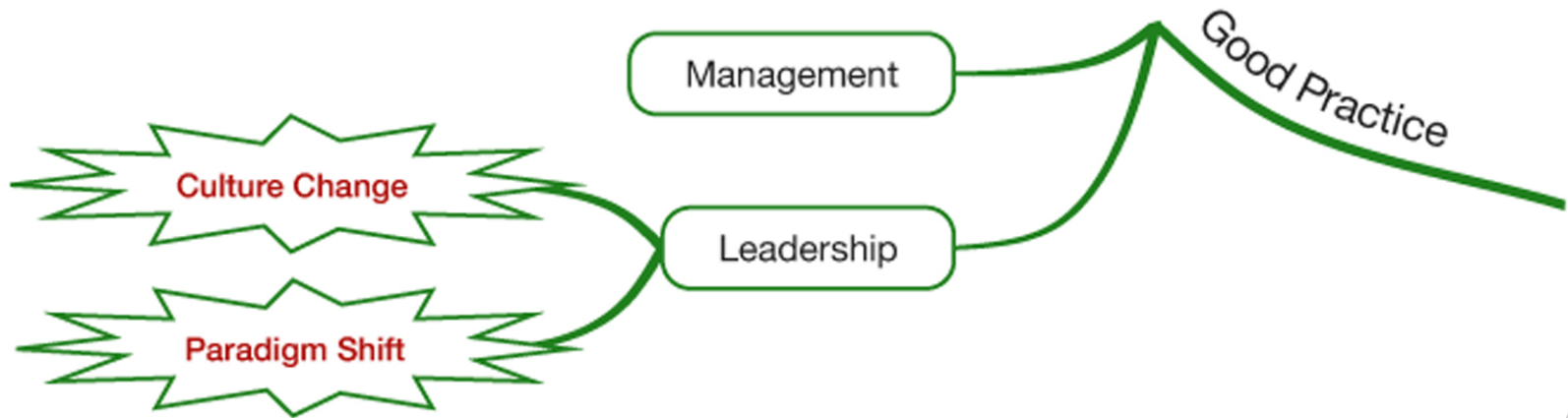
FORESIGHT

"By failing to prepare, you are preparing to fail."
-Benjamin Franklin

Produce Industry Food Safety & Traceability Framework



The Key to Traceability



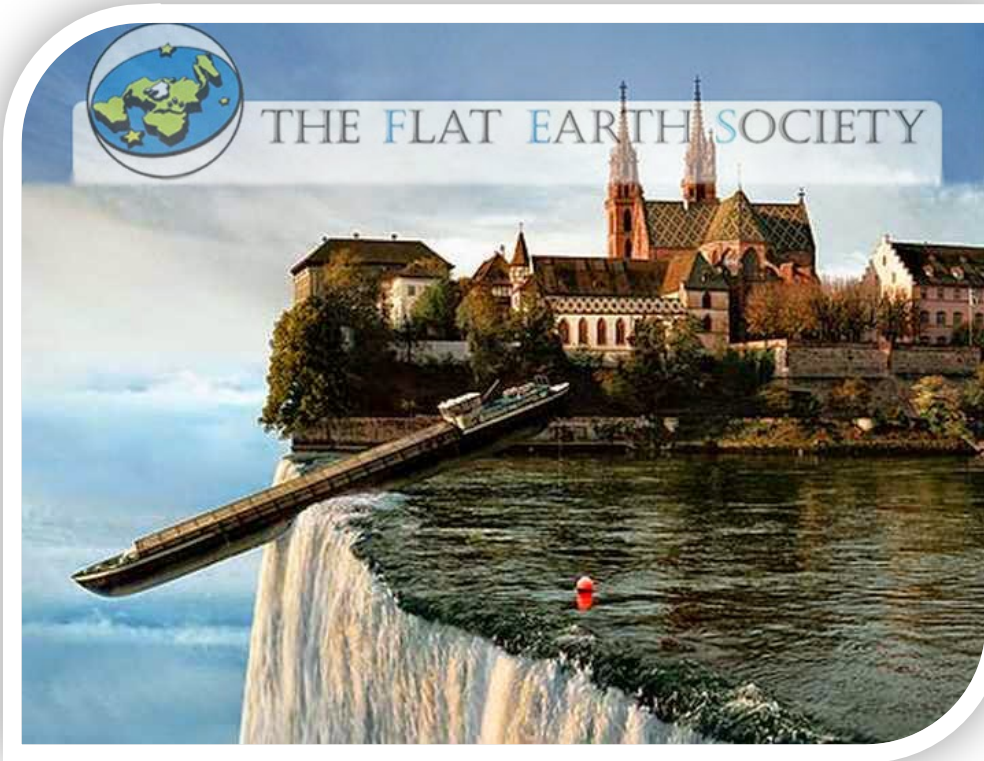
“I Do What I Always Do” Will Not Work

Culture Change. Be Bold. Think Differently.



Traceability Not An Optional Extra

Paradigm Shift



Food Safety & Traceability In The New Zealand Horticulture/Produce Industry

Retailer Business Schemes Objective:

New Zealand retailers operate within the New Zealand industry FS & T Framework, actively engage and take initiative.

To encourage and promote integrated Food Safety practices throughout the supply chain.

To have offshore retailers afford equivalency with their schemes.



There Is No Need To Reinvent The Wheel



GS1 Implementation Guide



Implementation Guide for Traceability of Fresh Fruits & Vegetables



HIGHLIGHTS:

- ✓ The guideline Serves as best practice to implement traceability in Fresh Fruit & Vegetable Industry
- ✓ The document provides a guide for fresh produce growers, packers, exporters/importers and distributors
- ✓ It is based on the GS1 Global Traceability Standard (GS1 GTS)

Traceability for Fresh Fruits and vegetables

Traceability is a business process that enables trading partners to follow products as they move from field through to retail store or food service operator.

Each Traceability partner must be able to identify the direct source (supplier) and direct recipient (customer) of product. The first priority of traceability is to protect the consumer through faster and more precise identification of implicated product. This is critical if the product must be withdrawn from the supply chain.

How can the guideline be used?

The guide serves as a blueprint for implementing traceability in the Fresh Fruit and Vegetable Industry.

It is based on GS1 global standards for supply chain management and product identification.

GS1 standards

GS1 is a global standard organisation active in over 100 countries. It is dedicated to the design and implementation of global standards for use in the supply chain. These standards provide a framework that allows products, services and information about them to move efficiently and securely for the benefit of businesses and the improvement of people's lives, everyday, everywhere.

GS1 standards make traceability systems possible on a global scale no matter how many companies are involved or how many borders are crossed as food and food ingredients travel from one end of the supply chain all the way to the consumer

GS1 standards can play a vital role in product recalls. Because they are global, reaching from one end of the supply chain to the other, they ensure immediate access to accurate information, which enables swift, comprehensive recalls.

GS1 Fresh Produce Guides

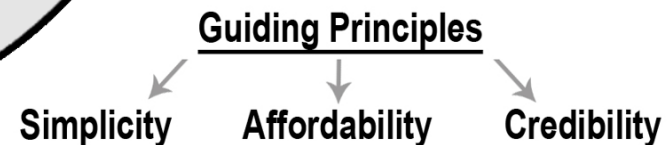
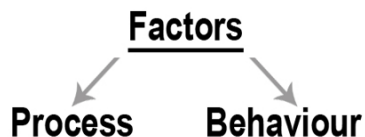
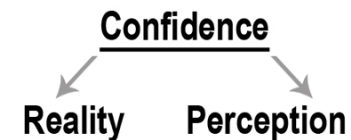
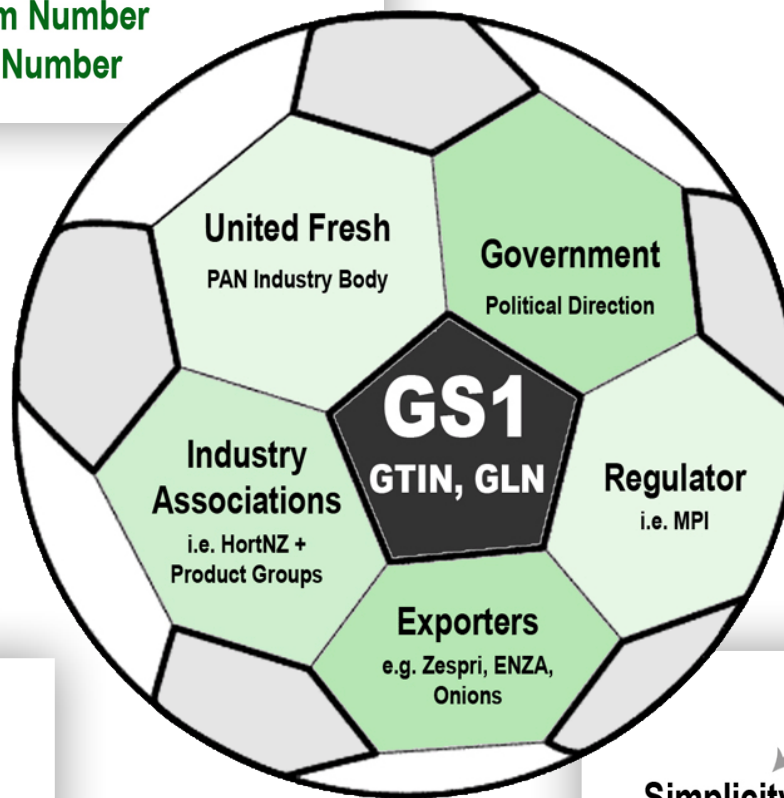


The Traceability Football

GS1 = Not For Profit Global Standards Body

GTIN = Global Trade Item Number

GLN = Global Location Number



Food Safety Issues – Now What?

A Proactive & Positive



**Needs To Be Strategically Integrated
Into All Business Processes**

Food Safety Culture - Reactive

**Means head in sand
until damage control
is needed!**



Food Safety Culture - Proactive

**Means a thought-through
Management process**



Food Safety Culture Management

Not as simple as this



Food Safety Culture Management

More like this!!!



The Future Of Produce Retail ?



The Future Of Produce Traceability ?

“From Bitcoin to puke-tracking: Walmart uses blockchains to monitor food...”



Walmart's Blockchain Vision



Walmart's Blockchain Vision

“With Blockchain, you can do strategic removals, and let consumers and companies have confidence. We believe that enhanced traceability is good for other aspects of the food systems. We hope you could capture other important attributes that would inform decisions around food flows, and even get more efficient at it.”

Frank Yiannas, Vice President of Food Safety,
Walmart



Walmart's Blockchain Vision



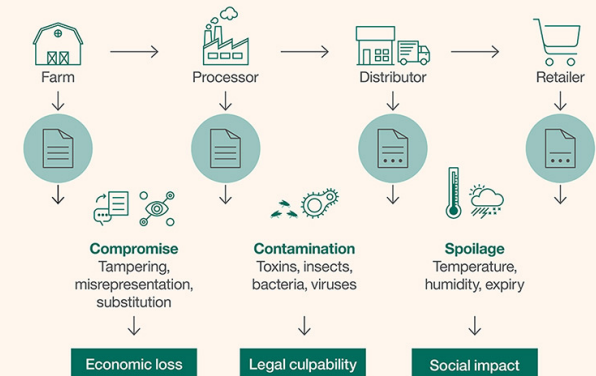
Trials are under way in the US and China



IBM is tapping blockchain for a more transparent, authentic and trustworthy global food supply chain.



Disparate ledgers and lack of transparency in the supply chain put food at risk.



Blockchain can help digitally trace and authenticate food products from an ecosystem of suppliers to store shelves and ultimately to consumers.

To learn more about how you can outthink your supply chain challenges, visit ibm.biz/BdsxrQ

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CD912354-US-EN-00

Food Act 2014

- Not fully implemented until 2019
- Horticultural food producers and packing operations require National Program 1 Certification by 30 November 2018.
- Higher risk horticultural producers (e.g. bagged salad packers) must have a Food Control Plan as of 30 June 2017
- Produce will receive more attention than was initially planned
- Early distractions have been dealt with (fundraiser BBQ's, over-the-fence transactions)
- Organised and structured businesses will cope well with compliance

FOOD ACT 2014

The facts



Ensuring the safety of the food we sell, whether it's made here, imported, or exported, is essential as a nation. Everyone working in the food industry has responsibilities to make sure that the food we buy is safe and suitable to eat, whether that involves growing and harvesting crops, the food manufacturing process, or preparation and sale of food at shops, cafes or restaurants.

The new Food Act gives food businesses the tools to manage food safety themselves in a way that suits their business, based on the level of food safety risk involved in what they do. The new Act is more flexible so that lower risk businesses and providers will have fewer requirements and costs.

It also allows businesses to be more adaptable to future changes in technology, overseas market access requirements, and consumer demands.

The Act comes into force on 1 March 2016. All new businesses must follow the new rules by this date. Existing businesses will be given time to change over to the new rules during a three-year transition period, from 1 March 2016–28 February 2019. Different businesses will need to transition at different times. Check the transition timetable on the [MPI website](#) to see when you need to make changes.

Growing and Protecting New Zealand

Produce Safety

FRESH PRODUCE SAFETY CENTRE

AUSTRALIA & NEW ZEALAND

Program Partners:



THE UNIVERSITY OF
SYDNEY



<https://freshproducesafety-anz.com/>

Food Something...

- Safety Science
- Protection
- Defense
- Integrity
- Security



SOMETHING WRONG
OFFICER?

Food Safety Science



New Zealand
**FOOD SAFETY SCIENCE
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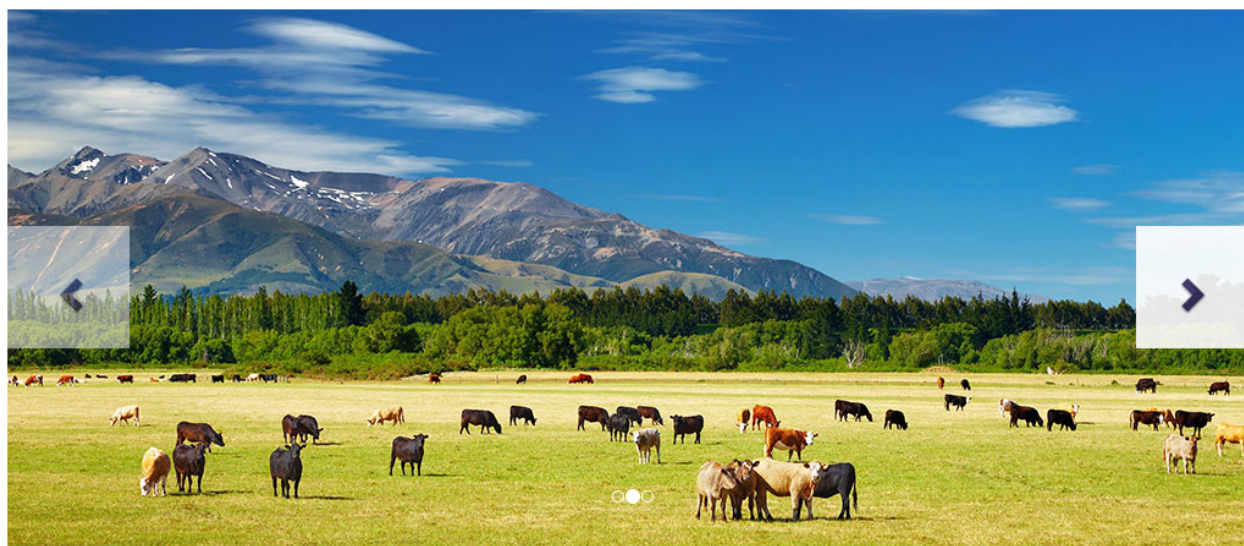
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Protecting and enhancing New Zealand's reputation for world-leading food safety

The New Zealand Food Safety Science & Research Centre (NZFSSRC) was established to harness the best of scientific expertise from across industry, government and research providers.

<http://www.nzfssrc.org.nz/>

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New Zealand-China Food Protection Network

The New Zealand-China Food Protection Network, begun in July 2016, is one of three China Research Collaboration Centres (CRCCs) funded by the New Zealand Ministry of Business, Innovation & Employment. The Network is hosted by Massey University and involves nine research partners: AgResearch, Plant & Food Research, ESR, Cawthron Institute, Massey University, University of Otago, the University of Auckland, Auckland University of Technology and Scion.

<http://www.crcc.nz/food-protection>

Food *Defence*



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A Global Food Supply

Our food system spans the globe so our research does as well.

OUR RESEARCH

Welcome!

The Food Protection and Defense Institute (FPDI), formerly known as the National Center for Food Protection and Defense, was officially launched as a Homeland Security Center of Excellence in July 2004 at the University of Minnesota. Developed as a multidisciplinary and action-oriented research consortium, FPDI addresses the vulnerability of the nation's food system. FPDI takes a comprehensive, farm-to-table view of the food system, encompassing all aspects from primary production through transportation and food processing to retail and food service.

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<https://foodprotection.umn.edu/>

Food *Integrity*



Asia Pacific Centre *for* Food Integrity

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We are FOOD STRATEGISTS
- we use our expertise and
networks to get safe food to
consumers

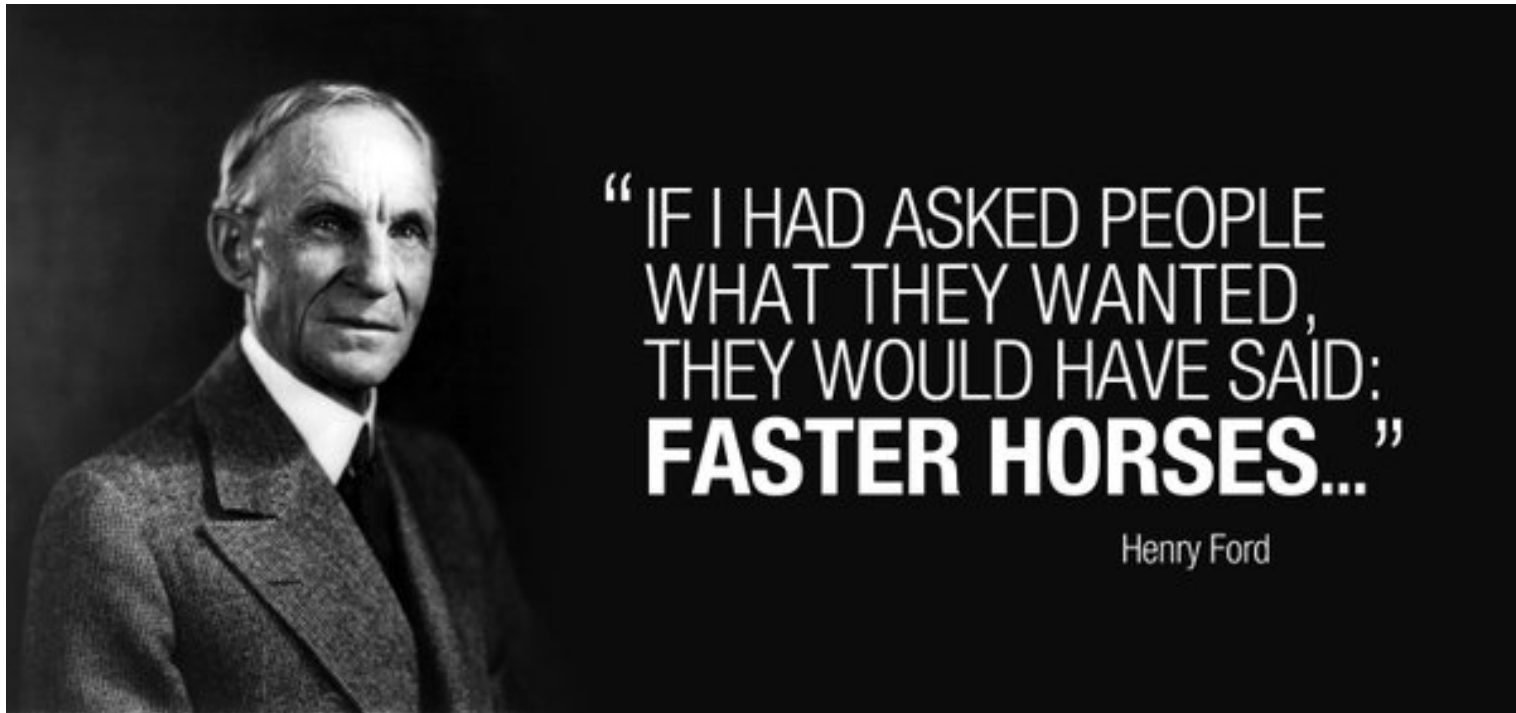
<https://www.asiapacificfoodintegrity.com/>

Food Security



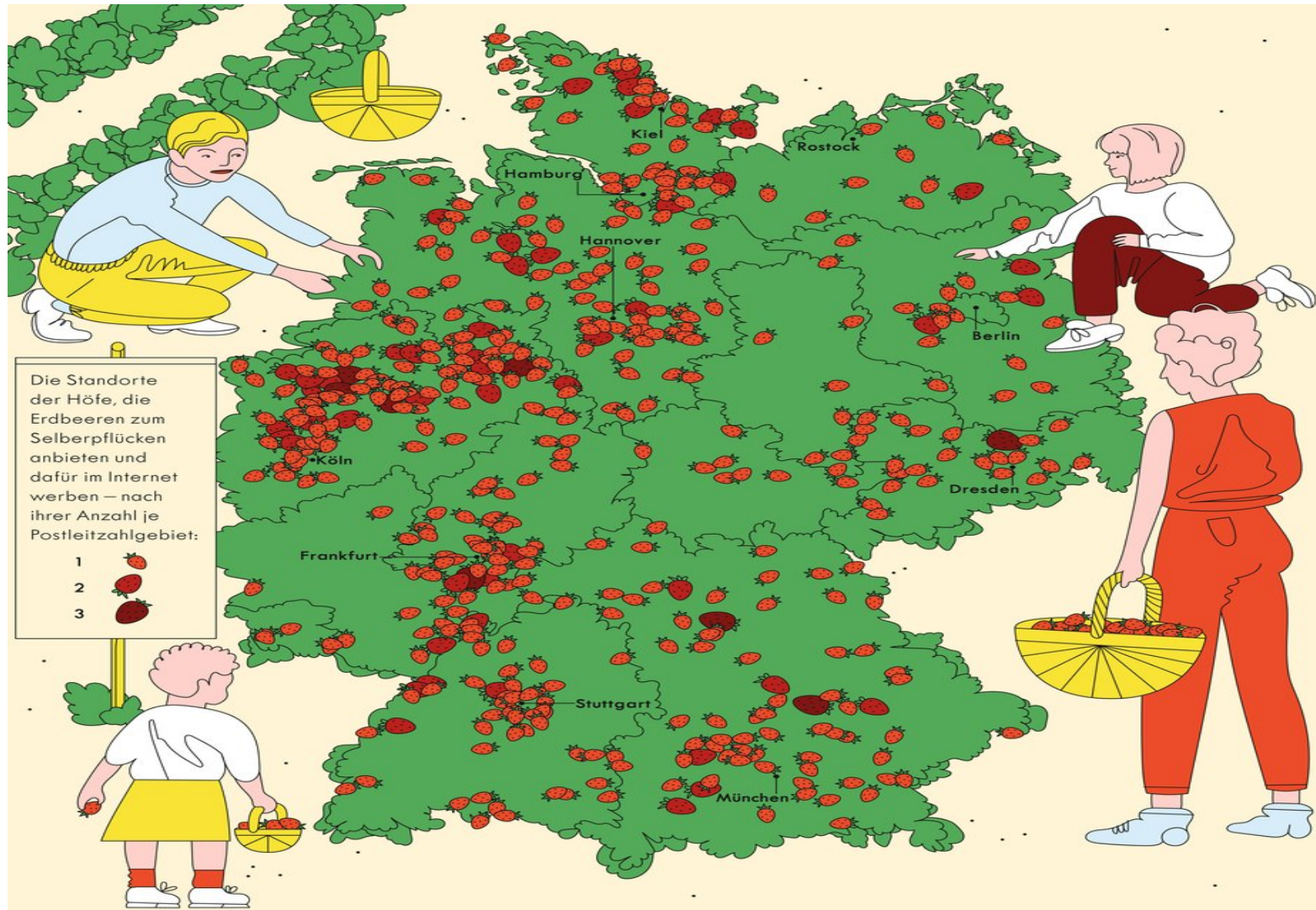
- Climate events
- Biosecurity events
- Political events
- Poor planning
- Sheer ignorance
- Not following due process
- Lack of over-arching strategy

Disruptive Technologies



- Food lab on a microchip
- Social media marketing
- Urban farming
- Orchard and Paddock Robotics
- Drones using artificial vision algorithms
- Precision farming at single plant level
- Big Data analysis

Big Data



The Last Word

“Man who sits with
mouth wide open
waiting for roast duck
to fly in waits a long
time!”



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