

SCAN

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Fonterra's Traceability Transformation

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Time to move on food safety and traceability

New Zealand has a new Parliament and we keenly await its next steps with the Food Safety Law Reform Bill. This very important piece of legislation did not pass before the House rose for the 23 September Election, despite a year-long process of select committee deliberation and reading debates.

It is an “omnibus bill” aimed at improving three existing Acts – principally the Food Act 2014 – which govern New Zealand’s food safety system and protect our reputation as a supplier of safe food to the world. The Food Safety Reform Bill is important in large part because of its traceability and recall provisions. As written, it will enable new regulations requiring all food producers and purveyors to establish and maintain their own systems for tracing food products and ingredients, and for recalling these if and when safety concerns arise.

Passage through Parliament has definitely been slower than earlier expected. At the bill’s last outing in the House (mid-August), it received strong support from Labour’s Damian O’Connor – now the Minister of Agriculture and of Food Safety – but challenge from New Zealand First and the Greens. They raised concerns about regulatory compliance costs on small food businesses and perceived gaps in food labelling requirements. When and how this bill proceeds in the new Parliament should be of real interest to everyone in our food industries.

Whatever political and Parliamentary processes do with this or similar legislation from now on, we can be certain on one thing – traceability of food and ingredients is fast becoming a “must have” in the eyes of consumers and of authorities in New Zealand’s major export markets. Our regulatory framework is just one component in a much bigger picture for food businesses, especially

those who supply into other countries. New Chinese regulations for ensuring food authenticity and traceability will have particular significance across global food trade.

With all this in mind, GS1 has recently run a series of traceability seminars for members throughout New Zealand. We invited two international experts to talk about global developments, while our own experts set out the practicalities for businesses in this country who want to get serious about maintaining food safety and consumer confidence.

GS1 Standards, including the GS1 Global Traceability Standard, can be part of any solution – and we explained how these can be linked to present and likely-future regulatory systems. Our message was that New Zealand food businesses should not focus simply on compliance with whatever new regulations are coming. We were pleased with attendance and believe the 210 people at the seminars got real value.

Of course many companies are not waiting for official prescriptions on tracing and recall. In this SCAN, we are delighted to interview Greg McCullough of Fonterra Co-operative Group on that company’s huge progress with food safety initiatives and traceability systems over the past four years. Fonterra is using GS1 Standards as an integral part of its move to “trusted source” status on food quality and world-class practice on traceability.

Other primary industries are moving in the same direction and this issue also reports on ApiTrak, the new solution for land-to-jar traceability in manuka honey production and supply chains. Our GS1 member case study is Pic’s Really Good Peanut Butter – a fast-growing global food brand out of New Zealand and one also built on product quality.

This country is moving ahead on food traceability and recall as companies respond to market signals, and get smarter about protecting their brands and trading connections. Parliamentarians have their part to play too – and we all look forward to seeing how they resolve issues from their economy-wide perspective. Compliance costs and labeling requirements are, undoubtedly, real and complicated issues.

Safe eating and happy reading!

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Pic Picot loves talking peanut butter with his customers

Peanut butter with really good use of GS1 Standards

Pic's Really Good Peanut Butter is spreading across the world – and the Nelson company behind the brand is making smart use of GS1 Standards to keep export growth smooth, rather than crunchy. The same jars of the tasty, nutritious nut spread sell in Australian, British and American supermarkets with the ease that they do at home.

In fact Picot Productions Ltd is exporting to 13 countries this year, building on the extraordinary success of its products in New Zealand since founder Pic Picot launched his then-artisan business in 2007. The brand has firmly established itself as market leader in this country with a range that includes smooth and crunchy peanut butter (salted and unsalted), almond and cashew nut butters, and peanut oil.

Pic's Really Good Peanut Butter continues to excite consumers here – and around the globe – for its taste, lack of additives and inclusion of “healthy fats” (unsaturated fatty acids) from the Australian-grown nuts which are used in its simple manufacturing processes. Distinctive visual branding and the unrelenting enthusiasm of Pic as “brand ambassador” certainly help.

The company has big plans for future growth based at its new site in the Stoke area of Nelson, where a larger factory is now under construction. At a distribution

centre already operating on the site, every jar sold in this country and across the world is filled, labelled and packed – 3.5 million of them in 2017!

Numbers and barcodes

Manufacturing Manager Heath Bowman says jar labels carry the barcoded Global Trade Item Number (GTIN) for that particular product, encoded in an EAN-13 barcode. Cartons are coded with a GS1-128 and leave the centre on pallets, each of these identified with a Serial Shipping Container Code (SSCC)¹. All products for export leave through the Port of Nelson.

Heath says GS1 Standards are of tremendous help to the business in every market. “I can't imagine what it would be like exporting a product such as ours without the globally standardised numbers and barcodes.”

He says there have certainly been no supply chain issues supplying Pic's Really Good Peanut Butter onto the shelves of major supermarket chains in Australia, the UK and the US.

Growth

Last year saw another leap forward for the company across the Tasman when Woolworths (with 900 supermarkets) became a customer, in addition to Coles which had been taking Pic's Really Good Peanut Butter since 2014. Apparently Australians love the fact that Pic settled, back in 2007, on high-oleic nuts grown in Queensland as the fundamental ingredient in all his peanut-based products: These nuts have an especially rich flavour, never go rancid and have high nutritional value.

This year the company has begun supply into the Tesco chain in the United Kingdom and also launched exports into China, selling through the Tmall.com platform.

Heath says sales growth in China is high with two container loads of palletised cartons leaving each month and consumers there buying entirely online at this stage. “If we move to selling through Chinese grocery stores, we'll be ready for that,” he says.

The sales growth into Australia and China, and also South East Asia, has set the basis for enlarging Pic's Really Good Peanut Butter operation in Stoke. The new factory, replacing two existing smaller facilities now in use, is due for completion in late 2018. In fact, New Zealand sales continue to grow rapidly as well and the company is planning for significant growth in turnover over the next five years.

Digital data

Pic's use of GS1 Standards has come a long way since the company joined in 2010 for numbers and barcodes to support its peanut butter sales to the big New Zealand grocers. Heath came on board in 2013 and quickly saw the advantages of using GS1's ProductVault

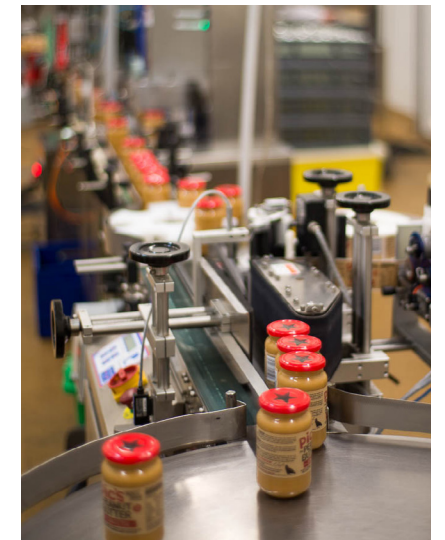
for systematic GTIN allocation and digital data storage. “Having all our data in one spot is definitely a blessing ... there's no worry about duplication of barcodes and allocating a new number is easy.”

Today the company also has master data and digital images for 53 of its products loaded into the National Product Catalogue (NPC), with only a handful not yet included. This provides supermarket chains in New Zealand and Australia with anytime-access to all the data they need in their trading relationships with Pic's Really Good Peanut Butter. Heath welcomes the much simplified interface between NPC and suppliers like him since GS1 launched the ProductFlow service in 2015. “It's become a much simpler system to use, requiring less effort to upload data and making it quicker to release product changes onto the market.”

Heath is also a supporter of ProductRecallNZ, on which the company went live in 2015. Pic's Really Good Peanut Butter has never been subject to a real-life

withdrawal or recall notice (although there have, of course, been practice runs). “It's good to have at our fingertips if and when needed ... I have to say the updated version of this service is better as well,” Heath says.

For more information, see
www.picspeanutbutter.com
Picot Productions: NZBN 9429000076418



¹ SSCCs are usually 18 digit numbers used to identify logistics units (pallets, cases etc) and their contents.



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Hayden Stowell uses his smartphone to read hive tags

Manuka honey traceability to promote product integrity and safety

Fast growth in the size and value of New Zealand's manuka honey industry is accompanied by high risks of product counterfeit and food safety. Industry pioneer Hayden Stowell and technology business partner Duncan Williamson have created a land-to-jar traceability solution for managing those risks – and at the same time, boosting productivity in honey harvesting, extraction, regulatory compliance and packaging.

The solution is ApiTrak – a traceability system for use by all industry participants to authenticate manuka honey, and to manage any food safety issues in its production and supply. ApiTrak is based largely on a GS1-designed model of traceability that encompasses land, hives, honey extraction and storage facilities, testing and certification steps, and final packaging into jars for sale to consumers worldwide. The system works on cloud-based computing, purpose-built smartphone apps, automatic data capture from tamper-proof tags, and unique identification of the critical components along the honey supply chain.

ApiTrak has been developed by Origins Software – the traceability solutions firm of Hayden (Chief Executive) and Duncan (Chief Technology Officer). This spring has seen its commercial launch after seven years in development, including beta testing during the 2016-17 honey production season. ApiTrak is now available to land owners and honey producers of any size, anywhere in New Zealand. Adoption is

expected to ramp up once the current season is completed.

“We’ve developed a system that is easy-to-use, affordable and adaptable to the specific needs of industry participants whether they are vertically integrated or operating at one stage of the supply chain only,” says Hayden. “New Zealand is estimated to have around 825,000 hives and all of them could be identified and managed using ApiTrak ... the potential advantages are huge in terms of honey quality and global reputation, and of industry productivity.”

Hayden knows the industry well, having co-founded and managed several manuka honey ventures since the early 2000s. He established the Honey Network bulk honey auction site (www.honeynetwork.co.nz) in 2014 and is a member of the Maori Honey Working Group. Duncan is a 35-year veteran of the New Zealand information technology sector. Both are intent on creating world-leading traceability, authentication and marketing systems for various of this country's primary industries.

GS1 design

In 2015 Origins called on GS1 to assess honey traceability opportunities, initially through detailed analysis of a well-established manuka honey business in Northland. Awanui-based Mana Kai Honey operates over 2000 hives and also offers commercial honey extraction and storage services for other beekeepers in the North. The analysis led GS1 to propose an industry-wide system that would be based on clear and unique identification of individual hives and supers¹, of pallets carrying these supers, of drums of bulk honey and of jars of consumer-ready product.

GS1's system design put strong focus also on identifying Critical Tracking Events (CTEs) in honey production and supply chains, and on Key Data Elements (KDEs) in relation to each of these CTEs. In general terms, CTEs are “instances where product is moved between premises, is transformed, or is otherwise determined to be a point where data capture is necessary to trace a product.” Generally, KDEs are



information on the what, where, how and why of each CTE.

Technology

ApiTrak is cloud-based with data from multiple sources received and stored on secure servers located within New Zealand. Origins' development work was guided by Hayden and Duncan's strong wish to avoid the need for users to invest much in new hardware. The system relies, therefore, on

an android smartphone app for the capturing of unique identifiers on hives, supers, pallets, drums and jars.

The identifiers are written onto tags which are then locked to prevent any later manipulation of numbers. Automatic data capture is another critical feature and this also minimises scope for data manipulation. The identifiers are read using the smartphone app and Near Field Communication (NFC)² technology, and automatically uploaded to the cloud. The latter also receives manually-uploaded data of relevance to each honey production and supply scenario.

ApiTrak has five modules related to different stages in the supply chain. Data in each module is of particular interest to land owners, beekeepers, hive and super handlers, honey extractors and those engaged in the bottling of honey in its final form – and of course, individual parties might be involved in multiple stages of the chain. At appropriate points, the system is integrated with the Ministry for Primary Industries E-Cert system and AsureQuality's reporting requirements. Data on hives and

locations can also be shared with ApiWeb – New Zealand's established apiary registration and disease management system.

ApiTrak provides for the use of GS1 GRAIs (Global Returnable Asset Identifiers) on hives, supers and pallets, with GTINs (Global Trade Item Numbers) then used to identify honey batches extracted from the supers and individual jars of the final product. Indeed each jar can have a serial number for tracing back to its batch and thereafter, for looking up details of honey production and extraction. The smartphone app can read tags on jars, with real benefits to retailers for stock control and to consumers for authentication. ApiTrak enables high visibility on all stages of production and supply, for all participants. For instance, the system can automatically alert an extraction facility when honey-laden hives and supers are being retrieved in the field: Processing resources and storage capacity can then be allocated with greater efficiency.

For more information, see www.apitrak.solutions
Origins Software NZBN
9429041522899

² Near Field Communication – the technology used for tap and pay cards at retail point of sale.

“We need to give our customers assurance that what they are buying is authentic and we will be able to demonstrate this with ApiTrak. As we grow the business to include extraction processing and bottling, we will be one of the only honey businesses that is truly integrated from the land right through to the brand. ApiTrak will be vital to our growth.” – Victor Goldsmith, General Manager of Ngati Porou Miere Limited Partnership and a member of ApiTrak's advisory board.



Benefits to ApiTrak module users

Landowner Module

- » Transparency on the numbers of hives located on their property, exact locations and hive ownership.
- » Knowledge of how much honey is produced from each hive.
- » Direct access to product test results for honey harvested on their land.

Beekeeper Module

- » Easy-to-use system for managing hive and super locations and movements – direct productivity benefits.
- » Ability for digital capture of data even without mobile reception.
- » Harvest declarations can be declared digitally, perhaps from the field.
- » Pre-alert to the extraction facility on incoming hives and supers.
- » Automatic compliance with AsureQuality requirements.

Interim Storage Facilities

- » Close the current information gap between hive and extraction.
- » Improve information flows through the whole supply chain.

Extraction Facility Module

- » Visibility on incoming honey and rapid digital harvest declarations.
- » More efficient interface with testing labs and closer linkage of results with honey in drums.
- » Faster and more accurate collation of information, and uploading of E-Cert reports.
- » Automatic generation of drum labels and packing slips.
- » AsureQuality is better placed to gather statistics and identify any adulteration of product.

Bottling Facility Module

- » More efficient interface with labs enables test results to be easily encoded on labels.
- » Faster and more accurate uploading of information to E-Cert system – with productivity gains to result from this.
- » Efficient generation of export documentation.
- » AsureQuality is better placed to gather statistics and identify any adulteration of product.

¹ Supers are the trays in which bees deposit honey. There are multiple supers in each hive.



Quality, trust and traceability:

transforming Fonterra

As Group Director – Food Safety, Quality & Regulatory Affairs, Greg McCullough is part of a team leading transformation within Fonterra Co-operative Group. New Zealand's dairy giant is moving from commodity producer to customer-focused global nutrition business. Greg talks with SCAN about the critical importance to Fonterra of product quality, of customer trust and of traceability systems based on GS1 Standards.

Greg joined Fonterra in August 2014, having previously held senior Safety and Quality management roles at Mead Johnson Nutrition in the US and at France-based multinational Danone. He returned to New Zealand with 15 years' global food industry experience – and a keen interest in dairy farming (his own farm near Rotorua is milking 1700 cows this season).

Q Following the WPC80 precautionary recall¹ in 2013, Fonterra committed to move to a customer and consumer-focused dairy nutrition business, instead of an efficiency focused manufacturing and ingredients supplier. What progress is being made in this transformation?

Four years on, we are making good progress. As a team we are turning Fonterra into the customer- and consumer-focused co-operative we aspire for it to be. Someone in the audit team of one of our biggest customers said recently, 'if you shut your eyes a few years ago and re-opened them now, you wouldn't think this was the same company'.

Following the precautionary recall, we realised we needed to change. Whilst

we had great efficiency, well developed systems and processes, and ongoing commitments to food safety and quality and to continuous improvement², opportunities were identified to improve some of our processes, systems and culture.

Trust is, of course, hard to earn and easy to lose so since early 2014, we have undertaken a conscious, strategic transformation that requires focus and input from everyone in the organisation as well as with our farmers, partners, suppliers and third parties.

This is shown in our purpose to be the world's most trusted source of dairy nutrition, as well as in our organisation-wide commitment which is to:

'Deliver what matters most to our customers and consumers – keep our promises and show we stand for uncompromising food safety and world class quality. Demonstrated through every aspect of our grass to glass supply chain.'

It is this commitment, and the strategy supporting it that we call Trust in Source. Trust in Source encompasses our global food safety and quality strategy, Focusing on removing risk, building trust and creating value. The strategy covers the following:

- people and culture
- food safety and quality monitoring and risk assessments
- food defence

¹ WPC80 is a whey protein concentrate ingredient produced by Fonterra. In August 2013, the company instigated the precautionary recall of close to 38 tonnes of WPC80 after testing indicated possible contamination with clostridium botulinum. Subsequent testing confirmed no contamination. Fonterra's traceability and recall capabilities were then subject to rigorous review.

² As identified in the report of an independent WPC80 inquiry panel for the Fonterra Board, October 2013.



- traceability
- meeting customer needs
- opening up lines of communication.

The change in our organisation has come largely through the deliberate, structured approach we have taken to strengthening food safety and quality culture. It's been about re-orienting our thinking to put customers and consumers first. The first phase was in New Zealand and some key global markets. We recently had independent verification of the progress made in our core region and the focus is now on incorporating the same successful approach to the business globally.

We really want our customers to experience and believe in the change in what we do and how we work with them. For instance, I am now on the governance board for three of Fonterra's biggest customers ... it's unusual for the Food Safety and Quality head to be so involved in commercial relationships, but it is part of how we've changed in our relationship with customers. We put technical people in front of them.

Q Of course you were a customer yourself back in 2013

The companies I worked for previously were themselves large customers of Fonterra. I knew this co-operative very well from the other side, and I could see both the passion of the people at Fonterra as well as the potential the whole organisation had to deliver on its commitments to change. I think one of the reasons they brought me in was because Fonterra was interested in having a Kiwi in this new role, someone who understood the New Zealand culture, and who had also led Quality and Food Safety in big global organisations.

When I joined Fonterra, one of my first jobs was to build the team to help deliver our Trust in Source strategy and unlock the potential we could see. We built the plan for getting the company where it is today. Actually I think we have done quite a good job. Coming in from the customer side, my perspective did help. Inside Fonterra we talk about it as being a shift from 'doing our best' to 'being the best'. We have really focused on improving as much as we can, acknowledging the reality that you're never going to be market leader in everything.

Q Where did you start with strengthening Fonterra's Food Safety and Quality focus?

We started in two areas – our infrastructure and our people. In terms of our infrastructure, we had a stringent look at all our assets, and have invested a lot to help ensure those assets – factories are the most obvious – are world class for delivering safe, quality products. As part of this we focused on the importance of the customer and along with this, on the quality of the assets we are using to deliver for customers.

Just as importantly, Fonterra has invested in our people and in strengthening our food safety and quality culture. We started by making sure we were clear on our expectations, what we stand for, around food safety and quality, and what we expect of our people as a result. Then we looked at both our senior leaders as well as the hidden, or informal leaders in our business and how they can role model the behaviours we are seeking. We have also invested a lot in building the capability of our people.

Q What does product safety and quality mean for you?

Two things. We want to make safe food – and at the end of the day, if you don't do that you won't have a business. The second thing is striving to distinguish your products and delight the consumer. It's their view of quality that counts. We must have products that meet their expectations and this includes products that can be traced back through production. At Fonterra, we put huge efforts into listening to what customers want and delivering on their expectations.

Before joining, when I was one of Fonterra's customers, my company used to do taste trials. Even in trials in the Netherlands, New Zealand milk just tasted better ... there is definitely something very interesting about product quality from Aotearoa.

Q Does your approach to safety and Quality vary depending on the market Fonterra is supplying?

We strive for a consistent approach irrespective of the markets we are producing for. Every day, we aim to make the best possible product, which exceeds the standards set by governments and the expectations of our consumers.

Q What is the biggest challenge to Fonterra in maintaining and improving Food Safety and Quality?

It requires constant focus, effort and vigilance; from everybody, all of the time. People and culture are critical. We have just launched a major campaign among our people called 'FSQ it's up to you'. Basically, we really want everyone to recognise that food quality is up to them, not just to their

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managers or to me as the Head of Safety and Quality. We want every single person in the company to think about safety and quality before they make decisions and in everything they do. It's about them thinking, 'we are a food company. OK what could be the result of my actions on the job today? If I was a customer or consumer, would I be making that same decision?'

As part of this, we have pictures showing people's children eating our products, and we're bringing products in from all over New Zealand, and the world, that our ingredients go into, for our people to try ... it becomes pretty clear that what mum and dad make at work, their kids will be consuming at home, or other people will be eating in other parts of the world. We're also sharing personal stories on why Food Safety and Quality matter. For example, we've had one of Fonterra's big customers from the US – an importer of milk protein concentrate which they use in a product for premature babies – to talk about nutrition for a baby born eight weeks early. This customer could explain to the people in our factories that, 'the powder you make is vitally important because we then turn it

into this product which helps enable very vulnerable children to live'.

Q Have some production processes been redesigned as part of the safety and quality transformation?

Yes and no. Obviously we want our business to be as efficient as it can be ... for instance, we maximise, through a stringently validated process, the time we run our machinery before it needs to be cleaned again. We have all key processes well documented, knowing that a lot of unwanted things can happen if we exceed operating limits. We also know that if we run X many hours on this particular product, we will produce the best possible form of it.

Q Turning to traceability systems, how far have you come since the WPC80 precautionary recall?

Back then, completing an end-to-end trace required the querying of multiple internal systems across several geographical regions, with work by multiple teams. Fonterra has transformed its traceability system with significant investment in technologies. We have built a bridge from

our SAP applications into the company-wide traceability system.

As of now, we have a majority of our supply chain footprint integrated into our global electronic batch repository (including ingredients and packaging). Where a batch of product is in the repository, we can track and trace all elements of it electronically within minutes.

Q That implies need for a common language between trading partners and capacity to rapidly share information?

Developing a common language shared by all partners in complex supply chains is not easy and yet it is critical to achieving effective and timely traceability right along the chain. Fonterra is addressing that challenge through adoption of GS1 Traceability Standards ... GS1 concepts and terminology are foundational to our traceability. Critical Tracking Events, Global Trade Items Numbers, Serialised Shipping Container Codes ... these are embedded in our framework. They are the language we use in talking with trading partners, including suppliers, customers and logistics providers.

Q When will Fonterra complete the full traceability transformation?

We are well on track to have a fully electronic traceability solution by 2020.

Q The company has recently launched a traceability app for consumers of Annum infant formula – QR Codes that can be scanned with a smartphone to see batch numbers and other product details. How has that gone so far?

We have launched our product authentication solution first in New Zealand ... we want to get the technology right here before taking it into the Chinese market. We know that once it's launched in China, almost every tin will be scanned! Chinese mums and dads are paying good money for imported product and they will be wanting to confirm every time that it is authentic, that it really does come from Fonterra and New Zealand.

Our system is a bit different because consumers scan a unique QR Code and when they reach our product authentication site they can see which plant made the product they're holding and where the milk was sourced (the typical collection area).

Our QR Code app actually enables us to see where each tin of Annum is being scanned – and it will be really interesting to see where our products are being taken and used. In contrast, most of our competitors' QR Codes simply pass the customer through to a generic website with no visibility on where the scan occurred.

Q How does the Annum app support Fonterra's big goals for traceability and consumer trust?

QR Codes and our authentication solution are our chosen technologies for better communication with consumers and for building their trust in Fonterra's branded products. Our plan is to eventually have QR Codes on all our paediatric and infant formula range. The extent and pace of this will depend on consumer demand and the attributes of particular products. The information being shared with consumers is backed by our internal traceability



system – and that enables milk to be traced back to farms.

Q How does "Trust in Source" relate to the "Trusted Goodness"™ quality seal that Fonterra launched in 2016?

The Trusted Goodness™ quality seal is a promise from Fonterra to our consumers that they can trust the food we make. Trust in Source is our internal strategy to ensure we meet that promise every day, from the farm to the customer.

Q Fonterra is clearly looking at how new technologies can support the business. What about block chain?

In terms of large-scale traceability, we have a strong long term strategy, which is about connecting our data with supply chain partners. So yes, we are looking at the potential of Block Chain as well. Our partnership with PwC and Alibaba³ will explore how it might relate to what we are doing already. We think Block Chain might dovetail quite nicely into our current solution. It's technology for sharing and authenticating data – and we are certainly open to that although it's early days. Fonterra has an enormous amount of computing horsepower with our trace

programme and I suspect Block Chain could be an extension on that.

Q Do you see the transformation in assets, systems and culture having improved Fonterra's overall performance yet?

Our journey has taken us to a quite different place. I think Fonterra is defined in the market by our focus on safety and quality, and by our transparency around production and product tracing.

Overall, the company is doing well around the world ... our products are sought after and we just can't make enough of some! In China, for instance, half the pizzas eaten there are made using our mozzarella cheese. The popularity of our products around the world, particularly among food professionals, is very high. Fonterra is recognised for making really good products.

Today we are far more than an ingredients and commodity supplier. You see that in how Fonterra's output is increasingly sold away from the Global Dairy Trade (GDT) platform ... we're moving far more into the traded product category. Our significant investments in quality assets and systems, and in people, are paying off.

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Traceability platforms attract interest

New Zealand food exporters are increasingly interested in commercially-available technology platforms for product traceability, including fTRACE and SHPING.

Such platforms give companies of any size the data storage and access capabilities they need for meeting consumer information demands on product provenance, ingredients and safety. They also make it easier for food producers, processors and distributors to participate in efficient data sharing with supply chain partners and regulators.

Both fTRACE and SHPING use GS1 Standards for item identification and barcoding. Both have developed smartphone apps that enable consumers to scan products and instantly see their place of origin, batch number, use-by-date and other desired information.

Leigh Fisheries is one of a handful of New Zealand food companies already using fTRACE, in this case to support fresh seafood exports into Asia, the United States and Europe.

The company says importers and consumers can scan its fish and see: the species, time and place it was caught, how it was caught, and the name and nationality of the catch boat. Leigh Fisheries – based on the east coast north of Auckland and branded as LEE FISH – sees traceability as an integral part of its promise to provide customers around the world with the best quality fresh fish on the market (see www.leefish.co.nz).

fTRACE is owned by GS1 Germany – a sister organisation of GS1 New Zealand – and uses cloud-based technology for storing, organising and distributing data to meet the multiple needs of diverse companies.

In addition to the consumer app in support of marketing and trust – a form of business-to-consumer (B2C) traceability – fTRACE is also developing comprehensive services for B2B data sharing and information analysis. These services are

fTRACE
Full traceability. Full trust.

designed to support legal compliance and certification requirements along with various other supply chain functions. The companies that use these services must still, of course, make consistent and rigorous use of GS1 Standards for identification and data capture, and ensure these data are uploaded to whatever platform is selected.

SPHING, created by a Melbourne-based company, has similar services which, it says, “combine brand protection, compliance and consumer engagement”. SHPING consumers can scan any product barcode with its app and so “learn what’s in it, where it’s from and if it is authentic”.

Representatives of fTRACE and SHPING presented at the recent GS1 Traceability Roadshow (see www.gs1nz.org/services/events-and-trainings/industry-events/traceability-oct-2017/).

For more information, see www.fTRACE.com and www.SHPING.com



Design alchemy with barcodes

Creativity in label and packaging design can definitely encompass good barcodes, as WelTec¹ design students have demonstrated this year.

GS1 New Zealand and WelTec have collaborated again in 2017 to provide students with an understanding of barcode technology, and with skills for making good barcodes part of attractive labels and packaging.

WelTec senior lecturer Craig Anderson says real world projects provide the best learning for students and in this instance, training input from GS1 has enabled them

to appreciate both the need for barcode compliance and the scope for creativity around barcodes.

GS1 has awarded a prize for the best barcode project work by a student in 2017, this being won by Alienor Durand Gondys for her label design on a made-up craft beer she calls “Ale-Chemist” (see right).

Alienor, a second year student in WelTec’s Bachelor of Creative Technologies,

designed her label around the idea of a product that involves an “old-school chemist experimenting with the creation of beers ... each inspired by a different scientific phenomenon like dark energy or ultra-violet light.

“I really enjoyed thinking outside the box in order to incorporate barcodes into my designs in a way that would create value for the aesthetic of the design and the barcode itself ... it’s about making a product stand out from the crowd,” Alienor says.



Times-7 antennas enable RFID worldwide

Lower Hutt company Times-7 has taken its next bold step in the fast-growing world of RFID (radio frequency identification) by launching a new efficient, robust and lightweight antenna.

Globally recognised for quality design and manufacture of ultra-high frequency (UHF) antennas, Times-7 has orders pouring in for its new A5020 model – another piece of the company’s niche technology for enabling RFID solutions that track well-defined items in diverse industrial, retail and healthcare environments.

The A5020 puts Times-7 even more firmly on the map as take-up of RFID surges in North America, Asia and Europe. The antenna – made using an aluminium composite material that is precision cut to the company’s patented design – creates exactly the read field that is required in many demanding situations.

It is the second new model since Times-7 shifted gear in 2015 to begin high volume production of antennas that are engineered and manufactured to world-best standard but are also sufficiently low cost for mass deployment in large-scale RFID applications. Thousands of Times-7 antennas are now going into manufacturing plants, warehouses, retail stores and hospitals where there is high value in identifying and tracking products, assets, tools, medical devices and so on. Large applications of the previous, A5010 model include the baggage-handling operations of one of the United States’ largest airlines.

Of course RFID technologies can be coupled with any data standard but Times-7’s UHF expertise is a strong fit with the growing application of GS1’s Electronic Product Code (EPC) standard for traceability in difficult and busy environments worldwide. Times-7 and GS1 New Zealand have long acknowledged their complementarity.

Chief Executive Jos Kunnen says his company’s move beyond small runs of custom-designed and -made antennas – the previous strategy that built Times-7’s reputation among RFID solution providers – has certainly changed its fortunes. This year Times-7 is on track for export revenues of several million dollars and Jos expects the figure to more than double within three years.

He says the company is addressing itself to an accessible market for UHF antennas worth around US\$50 million – not bad for a 10-employee business based in Lower Hutt’s light industrial area and drawing largely on suppliers from elsewhere in the Hutt Valley!

Times-7 was formed in 2006 to commercialise locally-grown new ideas for antenna design. The years since have seen Times-7 engineers develop around 400 patented designs, a tenth of these still of

commercial worth. The local investor group behind Times-7 brought in Jos and a revamped board to take the business much further as RFID expands rapidly. An electrical engineer by profession, Jos had a successful previous international career in technology companies.

“RFID is getting much more focus these days because tag prices have fallen dramatically and readers have become a lot smarter,” says Jos. “Five years ago, people were also being put off because tag read rates were just not good enough ... we’ve helped show that once you get the right antennas, everything can fall into place.”

The biggest RFID growth potential, he says, is with UHF applications.

The A5020 is an evolution from the previous A5010 model, being smaller, lighter and more easily fitted in many locations with minimal reduction in its read field. The antenna pattern is also sealed in a watertight plastic casing. While the A5010 is contract manufactured in the USA, Times-7 is making the new model entirely in Lower Hutt: Its small, well-organised factory can manufacture and test up to 200 units a day. Long may this business stay in the Hutt as more orders come in, says Jos.

For more information, see www.times-7.com
Times-7 Holdings Limited: NZBN 9429033894362

RFID certification

RFID practitioners in this country can now gain certification from the United States-based RFID Professional Institute with this body recently appointing the New Zealand RFID Pathfinder Group to be an onsite proctor and exam centre for its examination process. New Zealand is the first to participate in extension of this US-based certification which involves candidates being examined on all types of RFID system, and on their use in business and consumer applications. Prabakar Parthiban of Times-7 is the first New Zealander to be certificated after sitting the exam.



Holding Times-7’s A5020 model antennas are (from left) Senior RF Engineer Prabakar Parthiban, Operations Manager Paul Roling and Chief Executive Jos Kunnen

Note: Times-7 refers to the speed of radio waves which is thought to be the same as the speed of light, ie both travel round the Earth at the equator more than seven times in a second.

¹ WelTec is the Wellington Institute of Technology, a public polytechnic based in Petone, Lower Hutt.

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Time to consider 2-D barcodes?

Consumer demands for more information on products and the particular needs of online retailers will likely make 2-dimensional (2-D) barcodes – either QR Codes or DataMatrix barcodes – increasingly common over the years ahead.

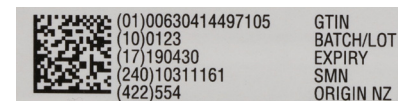
Businesses might want to factor this into their decisions when investing in new barcode scanners from now on: Equipment for 2-D scanning is more expensive but there is a “future proofing” advantage given the onward march of the QR Code and the DataMatrix.

Most scanners today work only for the traditional, linear form of barcode found on virtually all retail products. These barcodes can contain only one identifying number –

usually a GTIN (Global Trade Item Number) which identifies the product as, for example, a 400g can of beans made by a particular food manufacturer.

The rise of online retailing compounds the issue by, at times, introducing ambiguity around the product being purchased. Generally, a shopper will see their desired product as a photograph or illustration on the web. But what if there are variations in the product's appearance that do not warrant a change in GTIN? The online retailer might need “sub-identification” of these variations to ensure the customer gets exactly what they want. 2-D barcodes can be the solution, carrying a GTIN and a sub-identifier for reference by the retailer when fulfilling an order.

There is increasing use of 2-D barcodes around the world in retail and in supply chain management. GS1 makes no prediction on mass take-up of QR Codes or DataMatrix in New Zealand. However new barcode scanners have a life of about seven years – a long time given current technology trends.



A medical product's DataMatrix containing the correct GTIN, batch number and use-by date (30 April 2019), and an additional identification assigned by the manufacturer (1031161). This barcode also identifies NZ as the country of origin ('554' is an ISO country code used within the GS1 System).

GTIN allocation

GS1 has publicised a new version of its GTIN Management Standard, making it easier for members to know when they need to allocate a new Global Trade Item Number to a changed product. Three basic questions are set down to guide decision making:

- Do I expect my trading partners or consumers to notice the difference in the product?
- Is there a regulation or industry requirement to create a new GTIN in this case?
- Is there a supply chain significance in the change? For example, is the product bigger or heavier, or does it contain more or less content?

If the answer to any one of these is “yes”, then a new GTIN should be applied to the changed product. If you're still unsure you can use the decision tool on the GS1 global website: <https://www.gs1.org/1/gtinrules/en/decision-support>

It is also useful to note that a barcode will fail GS1 Verification if it contains a GTIN which should be changed but has not been (under the Standard). Verification is not just about the technical correctness of the barcode symbol: The validity of the GTIN in relation to the particular product and to other GTINs already in use are also assessed by GS1. (Suppliers and customers might still agree on the use of the GTIN in question if it meets their specific purposes and the barcode does scan.)

ProductRecallNZ activity

Food and grocery businesses are making good use of ProductRecallNZ, with 107 notifications through this GS1 service in the first 10 months of 2017. ProductRecallNZ enables fast, simultaneous communication of recall and withdrawal notices to other supply chain participants.

By 31 October, more than 2000 food and grocery companies were registered and

“live” on the service. Notifications in the latest 10 months (107) included 92 withdrawals where the product in question did not reach consumers: In January–October 2016, there were 85 withdrawals and a total of 109 notifications.

Pride in Print

GS1 is a Host Associate to the 2017 Pride in Print competition – the print industry's premium event for excellence in print and packaging design.

GS1 will assist competition organisers in promoting all aspects of print quality, not only barcode quality and innovation. We encourage GS1 members to consider entering their best labels and packaging in 2017.

For more information, see www.prideinprintawards.co.nz



Juliet Tweed

Juliet Tweed is our new Customer Engagement Manager, with a brief to promote exceptional customer experience of GS1 New Zealand's services and solutions by members and others. Juliet was previously a corporate account manager at Fumacare, part of the Rentokil Initial group, where she looked after a large portfolio of commercial clients in Auckland's West and North. Juliet is keen on music (listening, playing and writing), and spends other spare time reading and tuning into Podcasts.



Korey Zondag

Korey Zondag recently joined GS1 as a Verification Technician, based in Wellington. He was previously a category team leader with Relay, the book, magazine and convenience store chain operating at New Zealand airports. In this role, Korey was responsible for the management of print material into stores at Wellington International Airport.





New members/rights to use holders May – October, Welcome!

New Members

8 Water New Zealand Limited
Abra Trading Limited
Acm (Nz) Pty Limited
Acuda Group Limited
Afterglow Limited
Air Balance Marketing Limited
Alltrade Tools Nz (2016) Limited
Aotearoa New Zealand Fine Wine Estates Lp
Aotearoa Social Enterprise Trust
Apetiza Limited
Ararimu Valley Water Limited
Aromatics 2016 Limited
Asiaedge Marketing Limited
Astra New Zealand Creation Limited
Atlas Savas Turkish Bakery Limited
Ayrpak Kgp Limited
Bailey International Limited
Bao Skin Care Limited
Basic Industries Limited
Bci New Zealand Pty Limited
Beauty Life Limited
Bekland Limited
Best Abroad Limited
Best Foods Nz Limited
Big Chicken Retail Limited
Bismuth 209 Limited
Black And Blue Limited
Blake Lissington
Blendz 2010 Limited
Bln Limited
Bluebell Nz Limited
Boost Promotions Limited
Boris And Angel Limited
Brainjam Production Limited
Breson Fittings Limited
Bushgate Family Trust
Bushmans Honey Limited
Car-Fe Limited
Carter Consolidated Limited
Cce Group Limited
Chaotic Hop Brewing Limited
Chempro Nz Limited
Cherry International Limited

Chicken N Things (2012) Limited
China Sourcing Pty Limited
Classic Bake House International Limited
Classic Decor (2017) Limited
Coco Mango Limited
Coco Shed Limited
Colab Wine Merchants Limited
Comag Agencies 2017 Limited
Control Room Brewing Limited
Cook Hawke's Bay
Courage My Love Limited
Craft Gin Company Limited
Cranky Goat Limited
Creative Object Limited
Creative Woodcraft Limited
Davis Apiaries Limited
Delicious Nutritious Food Company Limited
Djs Health Trust
Domestic Agencies Limited
Down At The Farm 2017 Limited
DrinksSmith Limited
Drynz Limited
Dunbar Estates Limited
Earth Starch Limited
Eat My Lunch Limited
Eco Farm New Zealand Limited
Ecolibrium Biologicals Limited
Elanine Limited
Elysian Trading Limited
Embrium Holdings Limited
Enforture Limited
Enzyme Wizard New Zealand Limited
Etchart Limited
Excella Limited
Family Herb Co. (2017) Ltd
Farah (New Zealand) Limited
Fentec Group Limited
Fern Ridge Produce Limited
Filbert Industries New Zealand Limited
First Light Nutrition Limited
Flowlibe Limited
Forever 4 Kidz Limited

Forgotten 43 Brewing Limited
Formulators & Co Limited
Framecad Limited
Fresh Cut Flower Wholesalers 1992 Limited
Fresh Shellfish Limited
Garden Enterprises & Information Limited
Gathered Game Limited
Glass Vice Products Limited
Go Green Plastics Limited
Gobsmackingly Good Limited
Good Chow Nz Limited
Good Pantry Limited
Grandma's No1 Cracking Co Limited
Grant Success Limited
Green Hill (Nz) Limited
Greenhouse Bk Limited
Greenlea Premier Meats Limited
Grinning Gecko Cheese Company Limited
Grownatural International Limited
Grumpy Farmer New Zealand Limited
Gtz Trading Limited
H.b. Fuller (New Zealand) Limited
Happy Beekeeping Limited
Havana Brothers Bakehouse Limited
Hawkesbury Estates Limited
Healthy Hydration Company Limited
Healthy Start (Nz) Limited
Henny Penny Otago Limited
Henry Manufacturing Limited
Hi Vis Trends Limited
Holdfast Estate Limited
Innocent Packaging Limited
Invita(Nz) Limited
Jcmatthew Nz Limited
Jessica Susan Eastwood
Jo's Homemade Limited
Juice Products New Zealand Limited
Julians Berry Farm Limited
Kaks Marketing (Fiji) Limited
Kalex Wines 2013 Limited
Karo Nz Limited

Kida Food Limited
Kirk's Kai Limited
Kitchen Table Nz Limited
Kiwibranz Limited
Korpiko Nz Limited
Koyama Wines Limited
La Maison Foods Limited
Landcorp Farming Limited
Lane Lifestyle Farms Limited
Ledfocus Limited
Lindy Curtis
Little Dragon Nz Limited
Lloyd Family Wines Limited
Lubrication Wines Limited
Lumnz Limited
Macarons Etc Limited
Maimai Nz Limited
Mama Says Limited
Manhaas Industries Limited
Manuka Infused Nz Limited
Manuka Nature Limited
Mawish Food Limited
Maxwell Exports Limited
Mcpail Sports Limited
Meco Processing Nz Limited
Mee's Bees Limited
Michael Smith Trading As Scooter Holdings
Millennium Plastics Limited
Milligans Feeds Limited
Mountain Adventure Nz Limited
Mountain River Venison Limited
Mukund & Priyanka Enterprises Limited
Muscle Pharm
Myohm Limited
Net Success Group Limited
New Zealand Dairy Dessert Company Limited
New Zealand Dr. Semeli Health Management Co. Ltd
New Zealand Flour Mills Limited
New Zealand Kauritree International Trading Compan
New Zealand Premium Whitebait Limited
New Zealand Seaweeds Limited

New Zealand So Real Natural Food Products Limited
New Zealand Southern Hemisphere
New Zealand Uniyou Health Food Limited
New Zealand Wine And Spirit Merchants Limited
New Zealand's Best Food And Beverage Limited
Northpine Limited
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Palmer Resources Limited
Parisettes Dressings Limited
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Perroplas Nz Limited
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Pirate Enterprises Limited
Pirate Nation Limited
Pkn Trading Limited
Plumpandco Limited
Polarcold Stores Limited
Possum Pam Nz Limited
Post Art (2017) Limited
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Pow Horticulture Limited
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Pure Pac Limited
Pure Restaurant Limited
R F Data Systems Limited
Rage Against Chemicals Limited
Real Pet Food Company Limited
Represa Limited
Rochford Downs Limited
Ruben Brewing Company Limited

Ryan's Kitchen 2015 Limited
Salute Restaurant 2017 Limited
Scott & Leicester Limited
Scott Robert Miles Brindle
Scrubco Limited
Sgcb Holdings Limited
Shenzhen Xiaobai Entertainment Meida Co., Ltd
Simply Pure Limited
Skinnies Limited
Sol Natural Limited
Sosimple Limited
Soundlab Limited
Southern Clams Limited
Southern Cross Merchants Limited
Southern Wild Seafoods Nz Limited
Spence Farms Limited
Starfish International Limited
Stellare New Zealand Limited
Steve Test Member
Sugar Free Food Limited
Summit Produce Limited
Suntory Coffee New Zealand Limited
Sup Limited
Super Wing Samoa Ltd.
Takoha Wines Limited
Talisman Enterprises Limited
Taranaki Bio Extracts Limited
Te Awanga Estate Limited
Teddy Lane Limited
Temuka Pottery New Zealand Limited
The Agri Company Limited
The Barbers Shop
The Big Little Tree Company Limited
The China Hub Inc. Limited
The Damn Good Food Company Limited
The Fresh Berry Company Of Nz Limited
The Fresh Fruit Company Of New Zealand Limited
The Green Seed Limited
The Honey Collective Ltd
The Market Limited
The Mcelhinney Wine Group Limited

The Secret Farmer Limited
Thermakraft Limited
Tile Concepts Limited
Topline 2017 Limited
Tracyh (2016) Limited
Trade Me Limited
Trade Tested Limited
Trailman Importing
Trinity Road Limited
Tui Property Holdings Limited
Tunods Limited
Turners Global Marketing Limited
Two Tykes Limited
Unovent Limited
Valic Nz Limited
Vec Limited
Village Bakery 2016 Limited
Virginia-Pacific Water Bottling Limited
Vitis Cellars Limited
Vosmac Holdings Limited
W. White (Wholesale) Limited
Wellearth Endeavour Limited
Wellington Beverage Co Limited
Wetta Industries Limited
Wharepapa Landholdings Limited
Whitcoulls 2011 Limited
Whole Smoked New Zealand Limited
Winston Nutritional Limited
Wild Dispensary Limited
Wild Honey Nz (2017) Limited
Winston Nutritional Limited
Wise Boys Limited
Wme Products Limited
Wood Engineering Technology Limited
World Of Fitness Limited
World Partnership Limited
You Know We Aint Limited
Yume Limited
Zeli Holdings Limited
Zenith Distribution Limited
Zeosoft Holdings Limited

Rights to Use Holders

Fieldpak Limited



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Bev is the 'meet and greet' point of contact for members either calling, emailing or visiting our Wellington office.