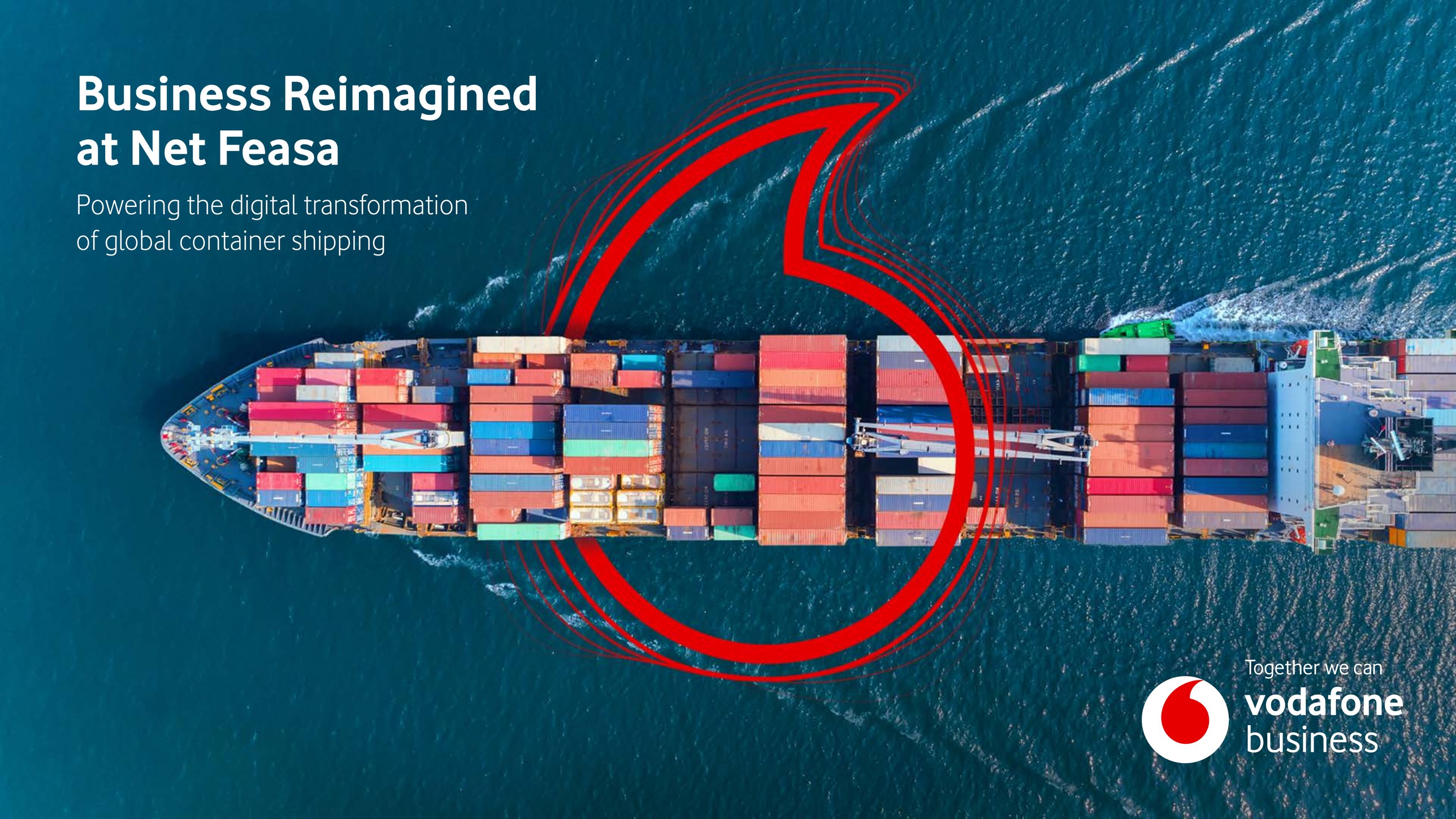
Business Reimagined at Net Feasa

Powering the digital transformation of global container shipping



Together we can
vodafone business

Summary

Introduction

With so much depending upon it, **you'd imagine that the world's supply chains, shipping routes and international ports were all seamlessly connected,** and that it would be a simple matter to track a container from point of origin to its destination, right around the world.

However, until recently, that wasn't possible. For long periods of their time spent travelling the world, **shipping containers effectively go dark.** Huge chunks of the international supply chain are effectively analogue, as containers are scanned in and out of way stations but aren't visible in the middle.


The system is not joined up and not transparent
- and that's where **Kerry-based technology company**
Net Feasa is making serious waves.

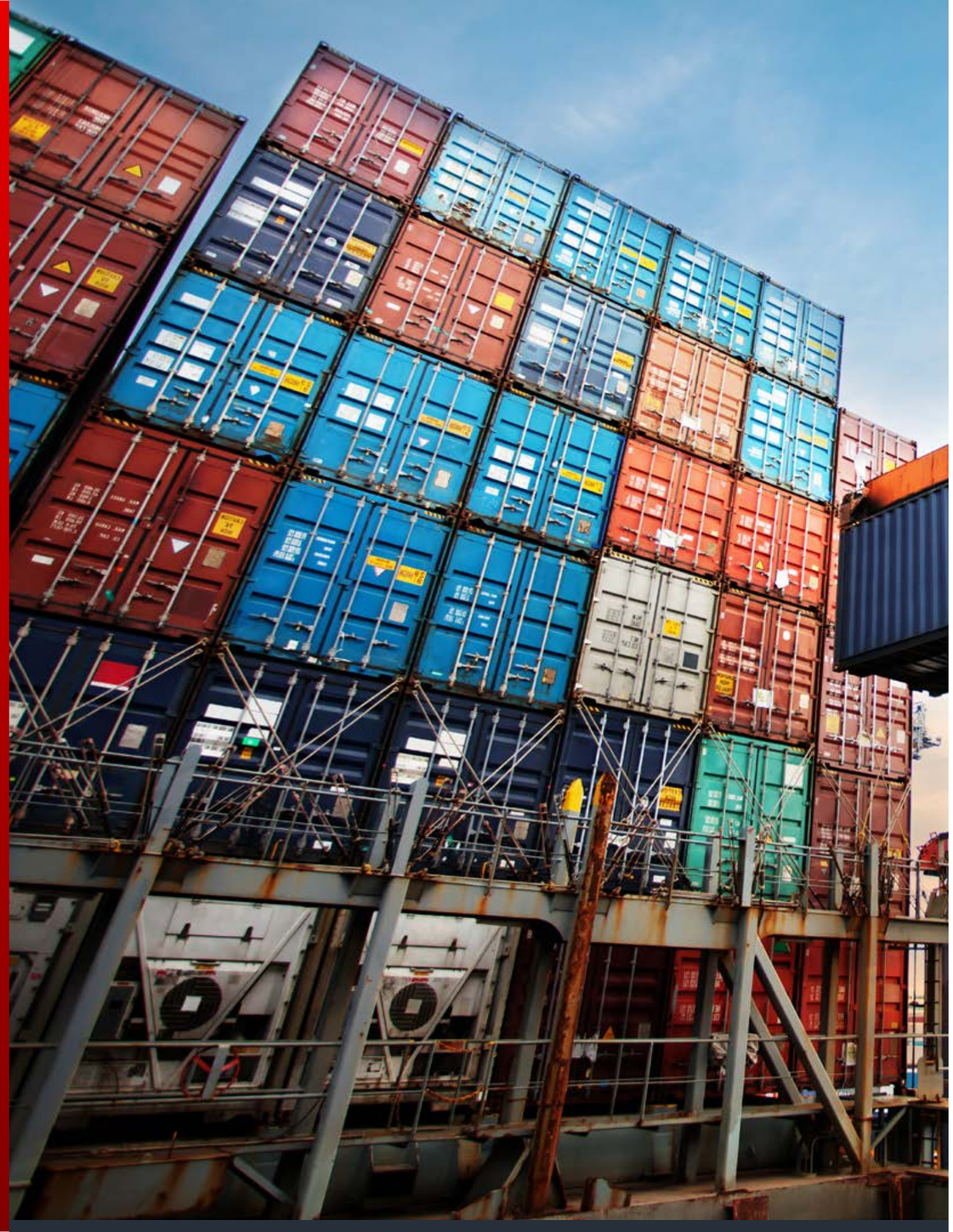
Transportation is ready for digital transformation

Founder of Net Feasa, Mike Fitzgerald explains the challenges

“The **average factory uses just-in-time manufacturing** and is highly organised. Staff get components from suppliers in the door, through the manufacturing process and back out the door again as finished products in minimal time. At the other end of the scale, **big retailers use customer relationship management** (CRM) systems to accurately forecast what they’ll need from those factories to fulfil customer demand in the most efficient way.

But in between, the transportation industry that moves everything around has a huge headache. Hugely **valuable pieces of information on the whereabouts of global goods are sitting in disconnected data silos.** For example, in North America you’d think there might be 40 or 50 big trucking companies in total but there are actually between 700,000 and 800,000.

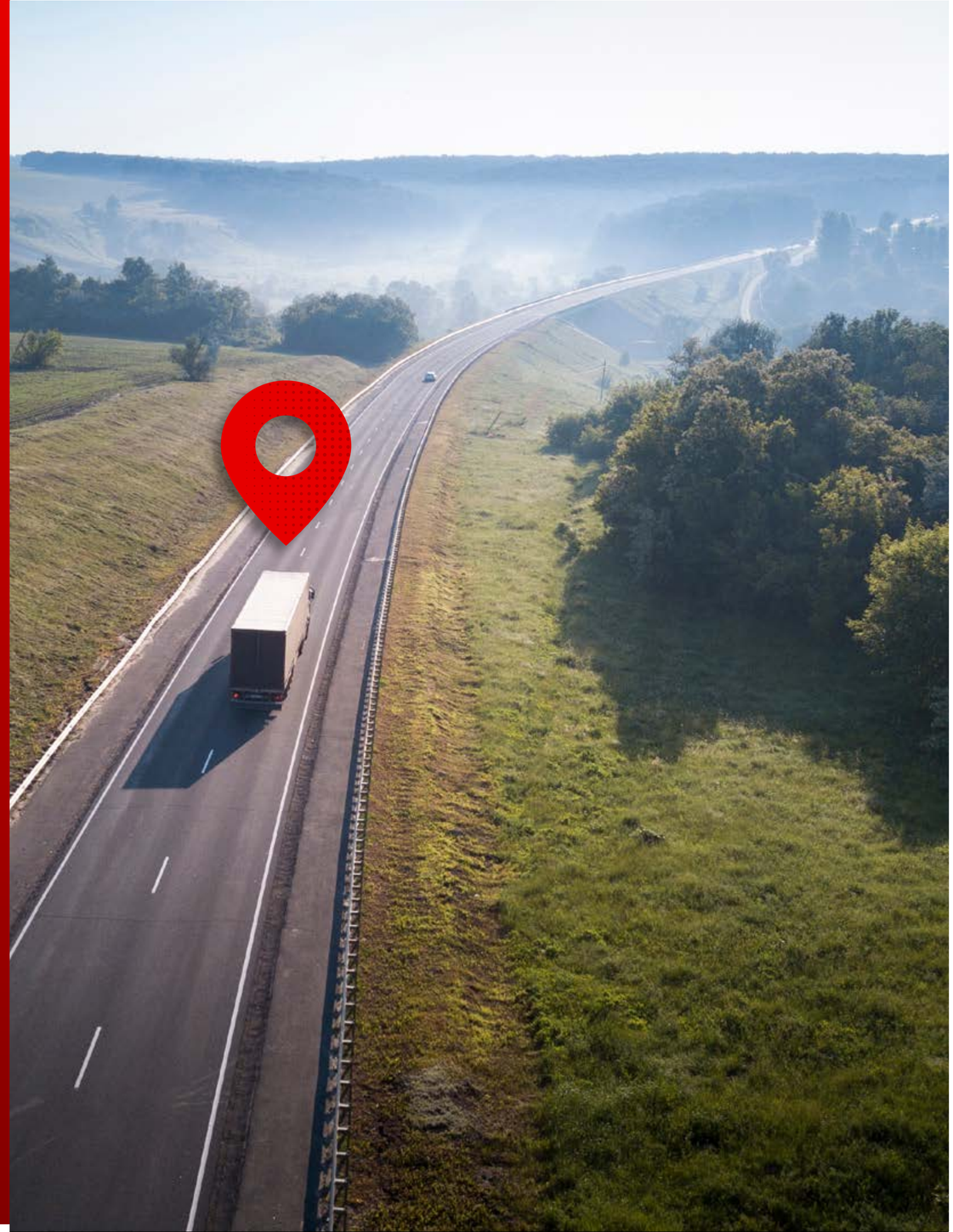
While each of these companies will have their drivers kitted out with mobile phones and GPS, the actual trucks themselves and the containers they carry are disconnected. There are some shipping companies with up to a couple of hundred people working for them that are still making phone calls to check where things are.”



Reimagining freight logistics with IoT

Net Feasa has teamed up with Vodafone to deliver a globally connected intermodal smart container solution (IoTPASS) for the freight logistics industry.

This Internet of Things (IoT) solution brings each container into the connected world, and adds a certain degree of intelligence. The technology uses very little power and needs very little-to-no maintenance.



Using Vodafone's global IoT network, Net Feasa can track individual containers and, using AI, it can predict if the container is on a truck, a ship a train or waiting in Port.

The resulting single, unified data set becomes hugely valuable to the shipping industry, and it's consistent wherever the container is on its journey across the supply chain.

This results in **cost savings and carbon footprint reductions through the analysis of real-time data,** detailing where the container is at all times - whether on land, in the sea or in the air. The solution offers true visibility and traceability across the supply chain and addresses the important circular economy requirements.

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At any given time, there are about 29 million shipping containers moving around the globe and another 20 million that are just sitting outside the supply chain. Ninety per cent of all goods are shipped using these 29 million containers. Most refrigerated containers are already tracked because they’re powered and highly insured and it’s relatively inexpensive to add tracking technology.

But this is an expensive solution when it comes to dry containers, these tracking devices just aren’t suitable for unpowered low-cost shipping containers. **That’s where we come in – using low cost and low power consuming IoT technology that tracks very efficiently, using devices that are effectively repurposed, extremely long battery life, mobile phones.**

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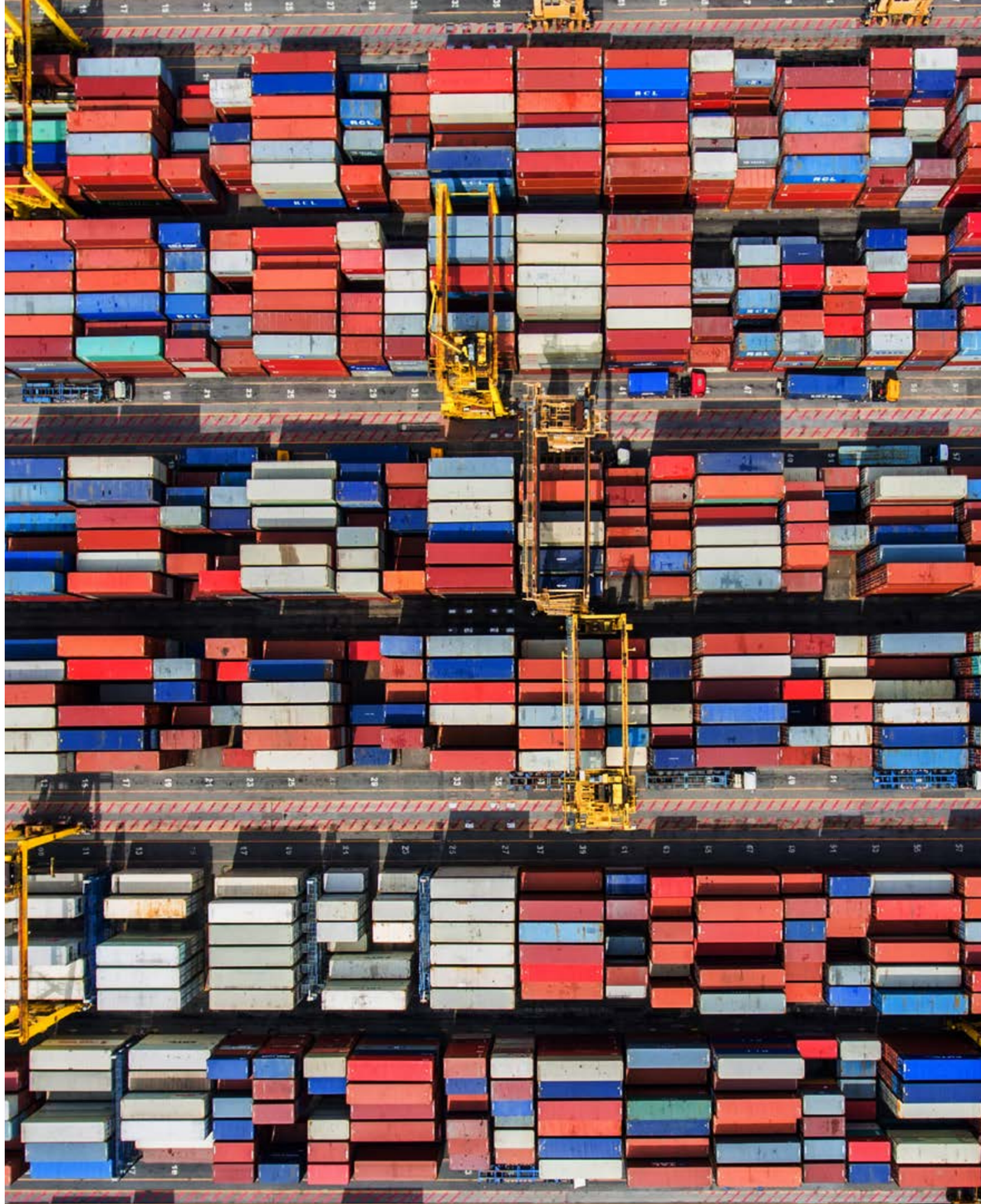
Mike Fitzgerald
Founder, Net Feasa

Enhancing energy efficiency

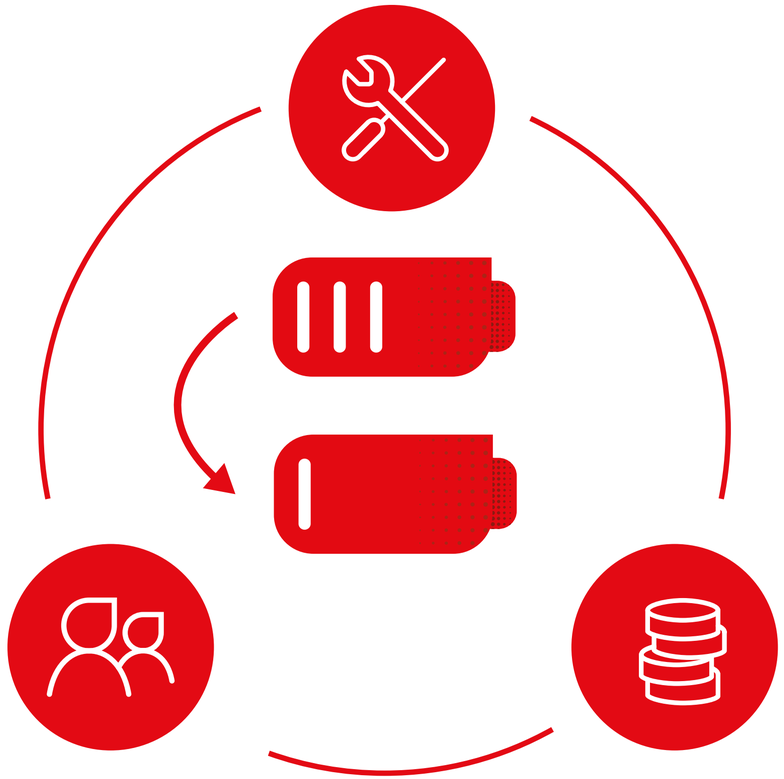
Net Feasa is currently working with the Tyndall National Institute to enhance energy efficient components, with the goal of ensuring that the tracking devices will last from the first day of a container being used right up to its end-of-life.

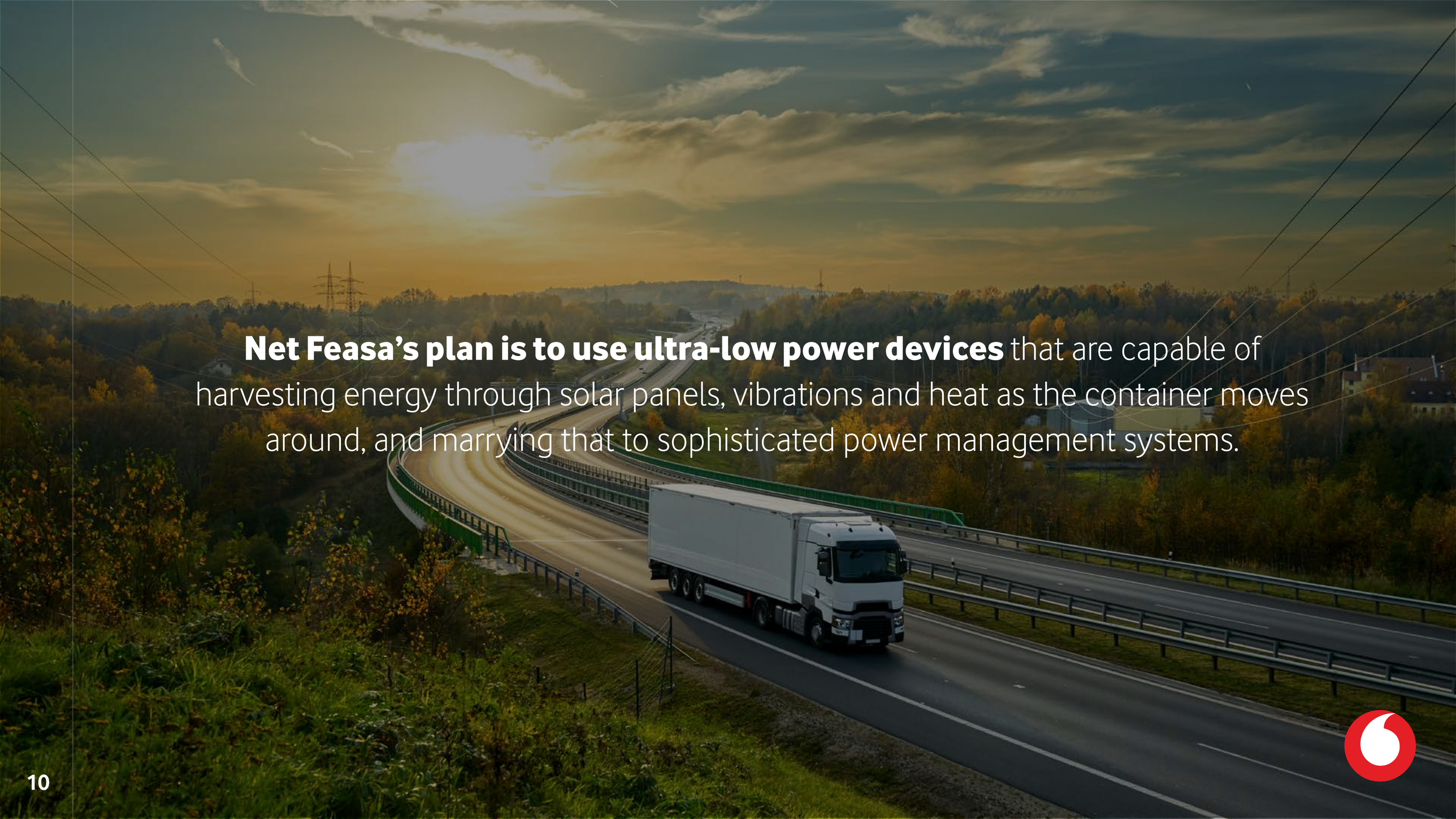
The current lifespan of a shipping container is around 14 years. Fitzgerald would like to see IoTPASS devices match that without needing to be recharged or maintained in any way in that time. Currently, the batteries used on competing IoT tracking systems have a life span of less than two years, so using them is not financially viable.



“No shipping company wants to commit to major maintenance programmes and **we don’t want to ever have to change a battery.** International shipping operates on very tight margins. We can’t have an expensive unit installed with expensive monthly fees and we can’t afford to allocate manpower to finding containers and changing batteries. If you just re-purpose existing tracking technology, it costs between $250 and $300 per container, which is completely unacceptable to the shipping industry, and that’s before you get to the monthly fee of $10 a month, which is also unacceptable. **If you go for the low-cost disposable alternative you have to account for the manpower required to replace them. We want to do away with all this entirely,”**

Mike Fitzgerald
Founder, Net Feasa





Net Feasa's plan is to use ultra-low power devices that are capable of harvesting energy through solar panels, vibrations and heat as the container moves around, and marrying that to sophisticated power management systems.

“The technology for energy harvesting exists, and power management exists, so we’re just taking it to another level using AI to understand when and how we should use the device components. But this has **applications well past monitoring supply chains.** It has extensive applications for things like smart agriculture, pet tracking, and even building management and structural engineering. Putting smarter IoT devices into a building allows you to do **far more sophisticated energy and resource management,”**

Mike Fitzgerald

Founder, Net Feasa

Partners with purpose

All of these applications are powered by Vodafone's sophisticated global network in a complimentary manner that benefits both companies.

"**We use Vodafone SIM cards extensively** and that allows us to address all these verticals, power our IoTPASS system and also, our smart farming applications. We can now build our AI based power management and energy harvesting on top of that," says Fitzgerald.

“IoTPASS is brought to life by the Vodafone connection, but then we add another layer of intelligence on top, to make the connection and the application smarter. This is where we deploy our artificial intelligence systems and machine learning to allow our devices to understand where they are and what they are doing, when they’re moving, when they’re sitting still. **All the time making smart decisions to save energy.”**

Mike Fitzgerald
Founder, Net Feasa

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