

The journey of bottled water

of Operations Management at Warwick Business School, researches supply chains and believes the case of bottled water is an example of how the globalisation of manufacturing leads to a fairly ridiculous and lengthy supply chain.

“There is a large distance travelled in the materials needed to make the bottle,” says Johnson. “That brings into question the environmental impact of our need for bottled water when in the US and other developed countries tap water is perfectly good enough to drink. In fact, in a taste test conducted by *The Guardian* of 10 tap waters and bottled waters, Severn Water’s tap water came out on top.”

Fiji Water source the plastic blanks for their plastic bottles from Allentown in Pennsylvania, US. They are shipped 7,895 miles to Rakiraki on the Fijian island of Viti Levu where the spring water originates. The plastic bottle tops come from Taichung City in Taiwan, chugging 4,815 miles across the North Pacific Ocean to Fiji. The paper labels are made in Wellington, New Zealand, before travelling the relatively short distance of 1,666 miles.

At its factory on Viti Levu, 400 workers manufacture the bottled water before the final leg of the journey, 6,602 miles to Plano in Texas from where it is distributed across the country.

A one litre bottle of Fiji Water can vary in price, between \$2–\$3, but with Johnson putting manufacturing costs at 22 cents it is a healthy return.

“It makes it more expensive than a litre of unleaded petrol,” says Johnson. “In the UK, tap water costs 0.151p a litre. It is expensive, it travels a lot of miles, and there is a lot of waste. Polyethylene terephthalate (PET) bottles can be recycled, but only about 40 per cent of them are.”

Fiji Water is just one brand in a competitive bottled water market and, though there may be concerns about the environmental impact of a product that developed countries don’t actually need, demand is growing.

The International Bottled Water Association reported a rise in

Global supply chains have given consumers in developed countries ever cheaper goods, but Ashley



Potter talks to **Mark Johnson** about the journey of bottled water that has given us a more expensive product

It sounds easy doesn’t it? Put some water in a bottle and sell it.

But a look at the supply chain of number one US importer Fiji Water shows it is not nearly that simple and involves 20,978 miles of travel before it finds its way into the shops of downtown New York.

It involves shipping material across two continents and between four countries before being exported to the US where Fiji Water has two per cent of a bottled water market worth an estimated \$10.6 billion a year.

It might be convenient to pop into

a shop and buy some water, but it is far from convenient to organise the manufacture of the product and shipping of what makes up the plastic bottle.

Of course the major cost is making the plastic bottle to contain the water. According to charity The Water Project it takes three litres of water to make the packaging for one litre of bottled water, while it estimates that 1.5 million barrels of oil a year are needed to produce the plastic for the US market.

Mark Johnson, Associate Professor

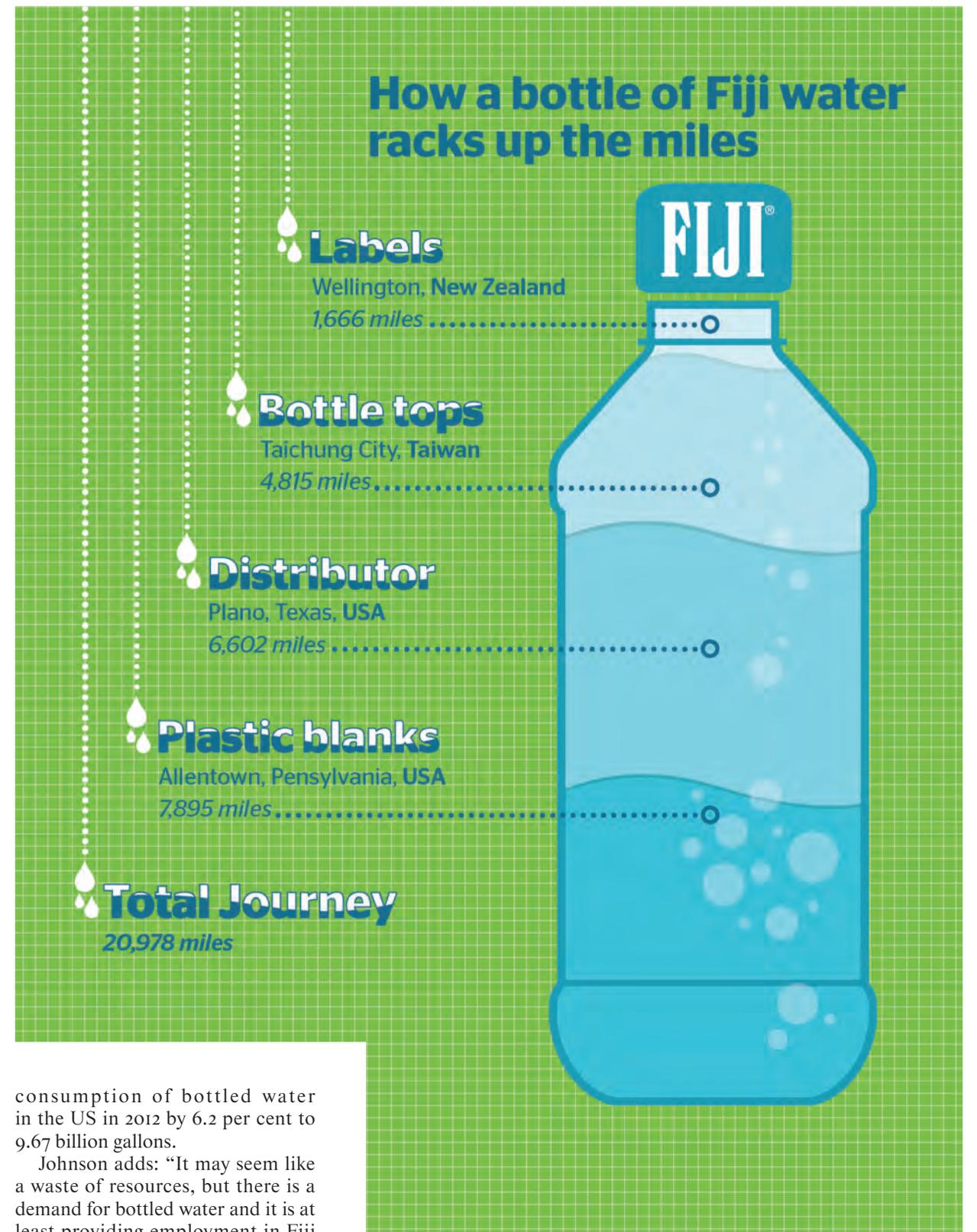


Illustration: Rebecca Curtis

consumption of bottled water in the US in 2012 by 6.2 per cent to 9.67 billion gallons.

Johnson adds: “It may seem like a waste of resources, but there is a demand for bottled water and it is at least providing employment in Fiji and revenue throughout the supply chain. But we must be aware of the cost that the convenience of bottled water has on the environment and our diminishing resources.” ■

Watch Mark Johnson's short film 'Supply Chains' at wbs.ac.uk/go/supplychains