

Fraudulent food

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Growth of counterfeit food and beverages puts brand reputations at risk and is potentially life-threatening. So what is the market like now, and what might be done over the next few years? Pira International investigates.

The food and beverage sector represents a significant part of many global economies, but the increasing problem of counterfeit food and drink is having a damaging affect on brand owners' image and profits.

According to the European Commission (EC), seizures of counterfeit food products entering the European Union (EU) increased by 77 per cent from 2002 to 2003, and the problem of counterfeit food and beverages is on the rise. In the EU more than 26,000 companies are directly involved in the food and beverage sector, employing over 2.7 million people - making it the EU's third-largest industrial employer and largest manufacturing sector.

The annual turnover for this sector is in the region of €600 billion. Within the 15 countries that were EU members prior to the latest set of additions in 2004, the food and beverage sector accounted for 13.6 per cent of the EU's turnover and 13 per cent of its employment. Counterfeiting therefore has the potential to damage a large section of society, both through health and the economy.

MethodsCounterfeiting food and beverages takes two forms: passing a product as a branded food or drink without permission to do so from the brand owner, and adulterating a product by dilution or substitution of inferior ingredients. In addition to the more dangerous forms of tampering or substitution, trademark or brand fraud both have an impact on consumer trust, and frequent or high-profile trademark infringements can seriously damage a product's or producer's market share.

Europe - market sizeIn 2004, European food and beverage manufacturers' production costs rose by 1.5 per cent, while the cost of imports fell by nearly double that figure, and exports dropped by 3.8 per cent.

Among the changes the EC has promised is the reform of the Common Agricultural Policy in order to reduce food production costs, and therefore enable producers to compete more effectively at one level. At the same time the EC is implementing wide-ranging anti-counterfeiting measures, to increase protection against piracy from both within and outside the EU.

Under attack The food and beverage sector is particularly hard hit by counterfeiting. The Italian farming association CIA, for example, says that the amount of bogus Italian products seized by EU customs has trebled. It calculates that the global market for pirated foods is worth €52.6 billion, or roughly half the whole of the food market's value in Italy itself.

In Russia, RosPotrebNadzor, the Russian Agency for Health and Consumer Rights, seized food products worth €9.6 million in 2004, and issued 30,000 orders to destroy counterfeit goods after inspecting 132,000 food companies.

Investigations carried out by the Russian agency also revealed that one-fifth of all food, beverage and tobacco products in Russia are counterfeit. It estimates that in Western Europe and the US the figure is closer to 10 per cent. In addition, the agency disclosed that 75 per cent of the mineral water sold in Russia has fake labels on its bottles.

In terms of seizures, the EU confiscated a variety of food products, drinks and alcoholic items worth €4.4 million in 2004. Confectionery and bakery products were high on the list of items affected, while brands such as Lipton, Coca-Cola and Nestlé were the biggest corporate victims of brand piracy. The figure represents roughly 4 per cent of the total counterfeited and pirated goods seized in that year, which amounted to €103 million. This total figure represents an increase in counterfeit goods of more than 12 per cent compared with 2003, and a 1,000 per cent increase compared to 1998.

In 2004 the amount of food and beverage products intercepted and seized at the EU's borders and deemed to be counterfeit grew by a massive 200 per cent. This was on top of a rise in 2002-03 of 77 per cent for food and medicines together, according to European Commission figures, demonstrating that the problem is not just growing but also accelerating at an alarming rate.

The profits to be made from food and beverage counterfeiting can be substantial and fake foods are not always easy to detect. The US Food and Drugs Administration estimated that, in one case, a Mid-Western orange juice producer defrauded its consumers of more than €37 million over 20 years. Another orange juice company and its president earned €1.2 million in two years by substituting invert beet sugar for frozen orange juice in concentrate. Yet another orange juice manufacturer saw its earnings rise from zero in the company's second year of operation to €46 million in its fifth year, before being convicted and sentenced for adulterating orange juice concentrate with liquid beet sugar.

In 2004, a Chinese soy source producer was found to be using human hair to make a 'blended' sauce. More seriously, Chinese officials admitted that in 2001, fake food products killed 146 people and hospitalised over 15,000. In 2004 a

single batch of fake milk powder killed 13 infants in China and put another 171 in hospital. In 2005, about 40 companies were found to be producing fake baby formula that was so lacking in nutrition that 229 babies fed on the formula in the city of Fuyang were found to be starving.

Technology solutionsThe technological solutions being developed in the fight against counterfeiting include covert systems that alert purchasers of fake products through simple means. A tamperevident seal can alert consumers if someone has interfered with a product. In addition, vendors can implement systems to detect bogus goods by raising the cost, and make it difficult to produce credible copies of the original product.

LabelsBrand owners can use security labels to secure and authenticate food products. PulsLine is an intelligent label created by UK-based Stanelco, which provides evidence of tampering that can be detected both electronically and manually. PulsLine uses a special multilayer laminate construction, with a security thread similar to the one used for banknotes, which can be micro-printed with a company name or logo. The thread is revealed by the removal of a tab pull, but can also be felt by hand. Companies can use scanners to detect broken threads on items that have been tampered with.

CodesAnother way companies can authenticate goods is by using codes. DataLase and DataLase Clear from DataLase (formerly Sherwood Technology) have both overt and covert applications. They can be used, for example, to produce a Datamatrix code that can be sandwiched between layers of laminate in a clear label, or to put a mark in the label that can only be detected when it is exposed to energy from a low-power CO2 laser.

Promotions

International security company De La Rue won a contract with a local Indonesian food manufacturer that, like its bigger multinational counterparts, was suffering at the hands of fake goods. Indofood launched a multi-billion Rupiah promotion based on people collecting six different designed holograms to make up a key word. The beauty of the promotion was that it would make consumers look for the genuine product so they could compete for a prize based on the completed word. The competition would also make the company more familiar in differentiating Indofood's product from the bogus product. The holograms also allowed hidden levels of security, to make sure the counterfeiters had not tried to copy the concept.

It was not the first time such a strategy had been attempted. To beat the UK consumer's weariness of constant product promotion, Nestlé decided to launch a €1.45 million promotion for one of its chocolate bars. A single hologram ticket would be the customer's route to riches. Naturally such a large prize would require unprecedented security, something that was put into place for the Indofood contract.

Growing trendsWith a growing number of technologies on the market, more brand owners are integrating security into their products to protect against counterfeiting and theft. UK-based food retailer Marks and Spencer Simply Food range is using electronic article surveillance (EAS) security tags to prevent theft of wines, ready meals and poultry items in some of its most vulnerable stores.

The store managers in London, where the tags are primarily implemented, will decide onto which products they want to attach EAS tags. The managers will be able to decide which products to tag, depending on the items that are at a greater risk of theft. If someone attempts to steal a tagged product the tag will activate an alarm.

Brand owners can also use a laser technique that etches away ink on labels. A US-based food supplier is trialling a technology called LaserSharp that etches away the ink on poultry labels to display information. US-based laser company LasX has developed the technology. LasX says the laser process is expensive and extremely difficult to replicate, because it is hard to remove the surface of the ink without damaging the base layer of the substrate. The technology can also be used to etch serial or security codes on a label.

A New York-based antibiotic-free chicken processor, Murray's Chickens, is using security tags to mark and protect the authenticity of its poultry products. Murray's is using a specially produced tag by Advanced Coding Systems (ACS) so shops can verify its meat. ACS says the tags cannot be reused, copied or forged, and will supply Murray's with specially made readers to authenticate the tags. Alcohol

In addition to food products, many leading alcoholic brand owners are also suffering from counterfeiting. The alcoholic beverage industry attracts higher tax prices, making it a prime target for counterfeiters to make a quick profit. Trade of alcoholic beverages is one of the growing markets and has an annual growth rate of around 10 per cent since 2000, which makes it more attractive for the counterfeiters to siphon profits.

The World Economic Forum estimates that spirits companies lose €244 million a year through counterfeiting, while the International Federation of Spirits Producers (IFSP), which includes Diageo, Pernod Ricard, Remy Cointreau and Bacardi-Martini amongst its members, estimates the global losses for all spirits to be between €407-570 million per annum. EU exports of spirits amounted to €5 billion in 2004, with wine exports of €4.5 billion. The European Spirits Organisation (ESO) estimates counterfeiting of spirits drinks at 5-8 per cent of total yearly turnover. This equates to a loss of €600 million a year for spirits, based on the production volumes of the large producers. The ESO points out that this ignores the effect of counterfeiting on smaller brands.

To governments and tax authorities around the world, counterfeiting is only part of a broader picture of fraud affecting the alcoholic beverages industry. The governments link it to a range of crimes, from smuggling and tax evasion (often involving organised crime, supply networks and sophisticated labelling fraud), through to smaller individual offences such as tipping or the substitution of more expensive brands with cheaper ones, mainly to deceive consumers.

In Europe, there is also the problem of the origin of products such as Champagne and Cognac. Producers count the use of terms such as 'sherry' for fortified wines produced outside the area designated for Jerez production, for example, as fake.

WhiskyThe Scotch Whisky Association attempts to protect Scotch whisky from all forms of unfair competition, including the use of misleading names or devices associated with Scotland to fool a consumer that a product is a genuine Scotch whisky. The association has a team of five lawyers and, at any one time, they can be involved in 50 legal cases around the world to protect Scotch whisky.

In 2004 leading drinks company Diageo launched the Scotch whisky industry's first miniaturised spectroscopic portable testing kit, called the Authenticator, to help crack down on counterfeit Scotch whisky.

The kit uses ultraviolet technology to test the authenticity of Diageo's Scotch whisky brands. Previously, the industry standard for verification of Scotch whisky required laboratory-based analysis - a process that can take up to two weeks. The Diageo Authenticator has been designed to work in the field and cuts the screening process down to less than one minute. This brings obvious cost savings, but more importantly means that action against counterfeiters can be swift.

Diageo has been developing the whisky authenticator for over a year. Unlike white spirits, where colourless markers can be added to determine authenticity, legislation prohibits the use of any markers in Scotch whisky. Since spirits attract the highest levels of tax of all alcoholic beverages, they offer the greatest opportunities for counterfeiters. However, counterfeiting is generally moving down-market and is no longer restricted to premium or luxury goods. In the spirits sector this means that, where false labelling was directed at international brands, even 'cheapest on display' spirits are affected in relatively wealthy and discerning retail markets such as the UK. Russia in particular has the potential to be a very large market for anti-counterfeiting technologies.

Counterfeiting is also associated with illicit distilling, which is both widespread and carries a huge human toll. In Russia, the problem of counterfeiting has undergone an unusual reversal. There is widespread alcohol abuse in Russia, and between January and August 2003 more than 27,000 Russians died from alcohol poisoning. While cheap vodkas do masquerade as more expensive brands, a great deal of illicitly distilled vodka is labelled and sold as products such as aftershave, insecticide and hoof softener, in order to avoid tax.

The National Alcohol Producers Association says half the vodka on the market is illicit and up to a quarter of this is surrogate hooch labelled as something other than vodka. While legal vodka production was down by 9.4 per cent in the first five months of 2005, the production of bootleg vodka and surrogate drinks shot up 40 per cent, it says. According to the Interior Ministry, North Ossetia and Kabardino-Balkaria are the main sources of illicit vodka in Russia.

Future outlook

Counterfeiters are becoming more and more sophisticated, which makes it increasingly difficult for consumers, and even some brand owners, to tell the difference between a genuine or a fake product. Brand owners are now implementing intelligent brand protection technologies that allow them to secure their products and make authentication of genuine food and drink products quick and easy. New security technologies are also being developed so that makes it easier for brand owners to verify products. Wafer-thin labels for food packaging that incorporate moving images are being developed by Siemens in Germany, and are expected to be available in 2007. The labels use electrochromic materials that change colour when an electrical charge is put through an extremely thin, miniature colour display made of conducting and semi-conducting plastics, printed on paper or foil.

Food and drink companies that are using security technologies are protecting their consumers against the risks of consuming counterfeit food and drink. Innovations in on-the-spot testing and security labels are beginning to reduce the influx of counterfeit products. New technologies such as laser etching and security labels could help crack down on counterfeiters, but companies still have a long way to go before their profits stop being diluted by the sale of fakes.