TRACK AND TRACE

What it is and how it can benefit the tobacco industry

By Jeannie Cameron

Tracking and tracing is on everyone's lips of late, and there are many suppliers of tracking and tracing technologies at the ready to help the tobacco industry meet its needs in this regard. But what exactly is tracking and tracing and what does it mean for the tobacco industry?

Tracking and tracing is essentially the ability to track goods from the point of manufacture through the supply chain to the point of sale and being able to trace back through the supply chain to any point of departure that the goods may have taken.

The main purpose is to ensure the integrity of a supply chain and to quickly identify any diversion of goods that may be illicitly traded or smuggled outside of a legitimate supply chain.

Most tobacco companies have for some time been able to track and trace their products for product recall purposes through various codes printed or embossed onto packs that describe the product, place and date of manufacture, batch, etc.

Unfortunately, this is not enough for the complex tobacco product supply chain, which is highly international and where factory rationalizations have led to manufacturing for export being the norm and in-transit diversion of tobacco products being a significant global problem. What is needed for true tracking and tracing is the ability to "aggregate."

Aggregation is the establishment of a parent/child relationship between the various packaging units and serialization standards along a supply chain. The main reason for using aggregation events is to create traceability for objects without scanning each of them individually. This is especially useful for products that are stored inside other packages. Without aggregation, each trader in the supply chain would be required to open each pallet, case and carton and scan each individual case, carton and pack. Aggregation helps anti-counterfeiting efforts because it makes it almost impossible for a counterfeiter to reconstruct the aggregation events.

Any changes along the supply chain, such as removing a case from a pallet, creating mixed pallets, destroying items or taking quality samples, needs to be recorded. The ability to manage aggregation events along the supply chain is a key requirement for an effective track-and-trace regime, and any future successful systems will need this in place. Aggregation is effectively achieved using a 2D data-matrix barcode applied at the time of manufacture to each packaging level. Capturing aggregation events adds another layer of security, as it allows the tracking of illicit trade by revealing inconsistent parent/child relationships through queries.

One of the expert reports produced as part of the development of the World Health Organization's Framework Convention on Tobacco Control (FCTC) Protocol to eliminate illicit trade in tobacco products made clear that aggregation was a necessary part of a track-and-trace system. "The ability to manage aggregation events along the supply chain is a key requirement for an effective track-and-trace regime; if this requirement cannot be fulfilled throughout the supply chain, compliance will not be possible."[1]

The FCTC Protocol requirements

The FCTC of 2005 is in fact a major driver of the tracking and tracing of tobacco products. Article 15 of the FCTC covers illicit trade and Article 15.2(b) states that "… each Party shall consider, as appropriate, developing a practical tracking and tracing regime that would further secure the distribution system and assist in the investigation of illicit trade."

This means that at present all parties (currently 174 governments) have a legal obligation to be considering the tracking and tracing solutions for tobacco products. The protocol attempts to put some detail and some standards around that obligation. The negotiations on the supply chain control area of the protocol have been controversial and lengthy. However, it is expected that the negotiating governments have now achieved consensus on the tracking and tracing provisions, and they will be adopted in Geneva in March 2012 at the fifth meeting of the Intergovernmental Negotiating Body (INB5).

The FCTC Protocol framed tracking and tracing in terms of a desire to provide some regulatory standardization around existing technology so that governments could choose to use the systems they wanted so long as they met a general set of standards assisting in the detection of smuggled and counterfeit tobacco products in the supply chain. The original aim of the government negotiators discussing this part of the protocol, largely contained in Article 7 – Tracking and Tracing, was to be able to ensure that products could be tracked and traced throughout an entire global supply chain—to ensure that tobacco products could be marked at manufacture so as to enable authorities to see the route through the supply chain from factory to retailer and to be able to trace back along the same route to determine any point of diversion on the supply chain across international boundaries.

However, when governments came together to negotiate this in 2008, they soon realized that the security of the revenue supply was the most important to them. Physical tax stamps can be stolen, damaged and counterfeited, and because they often carry the value of the tax rather than just mark its payment, they have high value. Tax stamp providers took little time to advise governments that the tax stamps they provided might be used to track and trace the products—after all, they are unique and use high-security inks.

It made perfect sense from a theoretical or policy perspective, but from a technological perspective the two applications were worlds apart. Tax stamps or markers are domestic in nature—tax being the sovereign right of states to determine and the collection is relevant to the government that levies it—there is no international dimension and therefore no reason for it to be discussed in the context of an international treaty between governments. With tracking and tracing, however, the very purpose is international—to track the movement of goods through international supply chains. As the process of FCTC Protocol negotiations continued, into the equation came a third dimension—product authentication, the technology to authenticate between genuine and counterfeit product.

Each of the three areas—tracking and tracing, tax and volume verification and product authentication—represents a solution to meet a different problem. If the problem is domestic tax evasion, then the solution can be an effective digital or paper tax stamp or tax marker. If the problem is smuggling, then the solution could be effective tracking and tracing of the supply chain, and if the problem is counterfeit, then the solution might be a product authentication device. If the problem is more than one or even all three, then the solution may be a combination of technology solutions—ideally solutions that can be integrated with each other or that might be hybrids linking one or two solutions together to meet all three problem scenarios.

The FCTC Protocol is worded such that it enables all three areas to coexist simultaneously and for governments to interpret what is necessary based on their own problems and internal decisionmaking processes. But what has occurred and continues to exist is a general confusion of the terms themselves and an understanding of what each technology is capable of doing.

What are the major tobacco companies doing?

Each of the international tobacco companies developed their own tracking and tracing technology to meet the developing needs of the FCTC Protocol enabling aggregation from carton to pallet, specific to the needs of each of their manufacturing lines and factory specifications. However, in terms of tax and volume verification, the four international tobacco companies grouped together in a formal agreement to adopt the Codentify solution produced by Philip Morris International, which is the application of a digitally generated 12-digit algorithm onto each pack of cigarettes. Codentify is also able to provide overt product authentication, although each tobacco company has its own proprietary covert authentication solutions and devices provided by various suppliers.

Ideally marking solutions should aim to improve supply-chain visibility by using item-level serialization. They should reduce the vulnerability to counterfeiting and diversion, enable more efficient product recall, provide a return on investment, protect brand value, integrate events with business applications and processes and reduce supply-chain costs.

If a technology security device is going to have as many features as possible in the track and trace, volume and tax verification and product authentication domains, then, in addition to the ability to aggregate, the following marking features are going to be necessary:

- A numbering system that uses international standards—such as international GS1 standards
- A globally unique identification number that is not predictable and not used twice
- Human readable printing/labeling of serialization numbers on all traded product units
- Establishment of query interfaces between databases

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by authorities using standard methodologies such as EPCIS (Electronic Product Code Information Service), enabling data sharing within and across enterprises aimed at gaining a shared view of the data within a relevant business context.

The whole area of product security and marking is currently a melting pot of technology solutions, and a dominant technology or solution is yet to emerge. Some solutions are based on security inks with specialized readers, while others use digital bar codes, others use mathematical encryption devices embedded into papers, others use holograms, others generate digital serialization numbers and others use RFID tags and fibers. Perhaps the cleverest might use a combination of features. It goes without saying that a digital element will be necessary in order to carry out some of the requirements demanded by regulators, such as the aggregation necessary in tracking and tracing systems.

The WHO expert reports state that there is no jurisprudence or decision by a competent World Trade Organization (WTO) body with respect to track-and-trace provisions, which means governments will make their own decisions on how they meet the objectives and therefore how the businesses registered within those jurisdictions must meet the requirements. In many cases, therefore, the decision will be regulatory driven rather than manufacturer choice. This is where manufacturers need to ensure they are talking with regulators early enough to hope to be involved and consulted in that process. WTO rules allow countries to manage trade in goods and services in order to achieve their national health objectives. The introductory clause and paragraph (b) of WTO Article XX (General exceptions) of the General Agreement on Tariffs and Trade 1994 (GATT 1994) permit countries to adopt and enforce the measures necessary to protect human life or health. Article XX(d) also allows members to adopt the measures necessary to secure compliance with laws or regulations that are "not inconsistent" with WTO law, including those relating to customs enforcement and the protection of intellectual property. Members may invoke fiscal reasons, although this is not explicitly stated in Article XX(d), as the measure also serves to combat tax evasion.

The Agreement on Technical Barriers to Trade strongly encourages the use of international standards, and that is consistent with the WHO Protocol, where the expert reports have concluded that an international track-and-trace regime for tobacco products would be technically feasible, including for lower-resource countries. The WHO is of the view that an international regime would interface with national or regional systems according to internationally agreed, core global minimum standards. The regime would not impose a particular technology at national or regional level, so that countries could build their own systems, according to their economic, technical, enforcement and legislative capacities.

While the United States took part in the negotiations toward the FCTC and Article 15, and indeed hosted along with the WHO the 2002 preparatory meeting with 142 governments to prepare the groundwork for the protocol, it is not taking part in the protocol negotiations, as it is not a party to the FCTC. It does, however, take part as an observer, and if it wants to find a way to link up the global tracking and tracing of tobacco products, then it will need to find a way to integrate. The U.S. has a unique system in which the states levy taxes and the collection is outsourced to distributors rather than to manufacturers. In the U.S. tobacco manufacturers, tax collection agencies and distributors will need to work together to find a way to ensure that products sold within the U.S. that are moved between states and internationally are able to be tracked and traced. The distinction between tracking and tracing and tax and volume verification may be more important in the U.S. than other places for this reason. Keeping these separate processes and tasks apart might be in the best interests of all; as explained above, tracking and tracing and tax collection and verification are completely separate things, although they can be done together or not.

The benefits

Despite the major driver for tracking and tracing in the tobacco industry being international regulation via the FCTC, and while it is an additional cost for manufacturers, it does have benefits. The industry is often slated as being involved in illicit trade. If it can prove through the use of tracking and tracing applications that its own supply chains are clean, and thereby prove it is not part of the problem, then that can go a long way toward restoration of a previously damaged reputation. And that can only be a good thing. TR

[1] Analysis of the available technology for unique markings in view of the global track-and-trace regime proposed in the negotiating text for a protocol to eliminate illicit trade in tobacco products - 22 November 2010

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NEOTECHNIK GmbH • Piderits Bleiche 8 • 33689 Bielefeld, Germany
Tel: +49 5205 7503 0 •Fax: +49 5205 7503 77
M@il: info@neotechnik.com • www.neotechnik.com